

ST MARY'S COLLEGE

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HISTORY
OF THE
Michigan Agricultural College
AND
BIOGRAPHICAL SKETCHES
OF
Trustees and Professors

BY
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ILLUSTRATED

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PREFACE.

The preparation of this history and these brief biographies was begun late in 1910, and has proceeded with many delays. The writer makes no apology for the unequal length of the biographical sketches, partly due to the difference in replies furnished in answer to his inquiries, and partly due to what seemed to the writer appropriate to say in each case. Defects will be apparent to every careful reader and errors will be found, notwithstanding the care of several persons in reading the proof.

The author has preferred to make exact quotations when appropriate instead of giving the substance of the thoughts in his own words.

Thanks are due Macmillan and Company for the privilege of copying a cut of Senator Morrill; to Dr. Demmon for permission to copy cuts of Governor Blair and regent Millard.

Thanks, many thanks are given to Ray Stannard Baker, '89, for valuable aid in preparation of parts of the manuscript; also to Professor R. H. Petitt and Dr. G. D. Shafer for furnishing photographs; to Professor W. W. Johnston for reading manuscript, to Dean R. P. Lyman and Secretary A. M. Brown for reading proof.

The writer has had unusual opportunities to enable him to prepare the volume.

Of the trustees and teachers of the college he has known all except twelve; two members of the board of education, H. L. Miller and J. R. Kellogg; two governors, Blair and Crapo; four members of the board of Agriculture, David Carpenter, Justus Gage, S. A. Yerkes, Charles Rich; President Williams, Professors Goadby and Weeks, and acting secretary C. A. Kenaston. He has worked in the faculty with all the professors of agriculture and nearly all the professors of horticulture.

Dr. Kedzie, Professor Cook and the writer were together members of the faculty for twenty-two years, three-sevenths of the existence of the college,—the writer was in continuous service for forty years. He has been a part of many troublous times, great revolutions and amazing improvements.

This history of the college was placed in the hands of the Board of Agriculture for publication, February, 1913, more than two and a half years ago—two years prior to this the copy had been read and accepted by a committee. It has not been revised and brought down to date, as the long delay was not anticipated.

W. J. BEAL.

BIBLIOGRAPHY.

Reference to most books and papers furnishing items for the history have been made here and there in the text; some with long titles often quoted are here given each with a number which takes the place of the title in full.

(1). Report of the Board of Managers of the Boston Asylum and Farm School for Indigent Boys, Thompson's Island, 93 year. Charles H. Bradely, Supt., P. O. Box 1486, Boston, Mass.

(2). L. H. Bailey in *Cyclopedia of American Agriculture*, edited by L. H. Bailey, Vol. 4, 1909, pp. 363, 364, 368, 370, 371, 375, 392, 399, 400, 401, 414, 415, 422, 424, 425, 426, 427, 437, 461, 465, 471, 474, 475, 480, 483.

(3). Transactions of the Michigan State Agricultural Society Vol. 6, J. C. Holmes, Secretary for 1854. In this volume appears an address by J. C. Holmes delivered before the Executive Committee of the Michigan State Agricultural Society at Lansing, June 12, 1885. Most of this address pertains to establishing a State Agricultural School, pp. 338, 339, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 355, 356, 357, 358, 359, 361, 362, 375, 379, 390, 392, 393, 394, 397, 398, 400, 401, 402, 403, 404.

(4). History of the University of Michigan by the late Burke A. Hinsdale. Biographical Sketches of Regents and Members of the University Senate, edited by Prof. Isaac N. Demmon, published by the University 1906, pp. 15, 16, 17, 26, 27.

(5). Bureau of Education, Circular of Information, No. 4, 1891. Contributions to American Educational History, Edited by Herbert B. Adams.

No. 11, History of Higher Education in Michigan by Andrew C. McLaughlin, Assistant Professor of History in the University of Michigan. Washington Government Printing Office, 1891. Article "The State Agricultural College" by President Oscar Clute, Lansing, Mich., pp. 105, 106, 107, 108.

(6). The Report of the Superintendent of Public Instruction on Dedication and Opening of the Agricultural College of the State of Michigan, 1857.

(7). History of Collegiate Education in Agriculture by Dean Eugene Davenport in proceedings of the Society for the Promotion of Agricultural Science, 28th meeting held at Lansing, Michigan, 1907, pp. 44, 52.

(8). Transactions of the State Agricultural Society, Vol. 5, J. C. Holmes, Secretary for the year 1853. Address of President H. P. Tappan before the Society at Detroit, pp. 199, 200.

(9). Second Annual Report of the Secretary of the State Board of Agriculture for the year 1863, pp. 18, 27, 28, 30, 31, 32, 37, 38, 39, 40, 41, 42, 43, 47, 48, 49, 50, 111, 112, 115, 116, 117, 125, 126, 127, 128, 129, 130.

(10). Third Annual Report of the Secretary of the State Board of Agriculture for the year 1864. (All reports for this year are erroneously stamped on the back of cover 1865) pp. 113, 114.

(11). Transactions of the State Agricultural Society for 1857. Vol. 8, J. C. Holmes, Secretary, pp. 25, 285.

(12). Diary of President T. C. Abbot beginning June 1840 and con-

tinuing to Dec. 1885. These full and interesting personal notes have been copied and placed in the vault of the Library.

(13). Bulletin Vol. 4 No. 1 of the University of Illinois by President Edmund J. James, November 1910, proves that Jonathan B. Turner was the real father of the Morrill Act of July 2, 1862.

W. J. BEAL.

Amherst, Massachusetts.

October, 1915.

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CHAPTER I.

LAYING THE FOUNDATION.

As Judge Thomas M. Cooley once remarked in an address, Michigan was fortunate in the persons to whom the destinies of the territory were committed in early days. It is a remarkable tribute to the quality of the pioneers who migrated to the back woods of Michigan that even before the territory had a total population of 200,000, while the original forest was still largely unbroken and wild animals still plentiful, that they should think of establishing a State University—which was opened in 1841 with two teachers and six students. It was still more remarkable that fourteen years later, they should attempt a new and untried form of education, and should establish in the forest near Lansing, twenty-seven miles from the railroad at Owosso, and thirty-seven from that at Jackson, an Agricultural College, the first of its kind in the world.

At the time when Michigan was framing her constitution and organizing her state institutions, as Judge Cooley further points out in a statement elaborated by Dr. B. A. Hinsdale in his *History of the University of Michigan*, there was a wide-spread educational revival in the United States. While it was purely American in its origin, it was stimulated and to a degree shaped by foreign influences.

Judge Cooley relates the interesting story of the way in which the impulse from the centers of culture in Europe reached the heart of the backwoods of Michigan.

"American students in small numbers," he says, "begun to resort to the German Universities for the teaching they could not get at home in the decade 1810—1820, and about the same time our scholars and teachers, also in small numbers, began to visit German schools and to report to their countrymen what they found. But, curiously enough, the strongest stream of German influence reached us through French channels. Madame De Staël's '*Germany*,' published in an English version in London in 1813, was a revelation to some minds in this country. These ideas were a system of public instruction embracing the three divisions of schools,—primary schools, secondary schools and universities; a system created, supported, and supervised by the state, thus securing responsibility and unity. It is no exaggeration to say that a single copy of M. Victor Cousin's Report, which found its way into the oak openings of Michigan, produced results, direct and indirect, that far surpass in importance the results produced by any other educational volume in the whole history of the country.

"Two men suffice to form the connecting link between M. Victor Cousin and the educational institution of the new commonwealth. John Davis Pierce, a native of New Hampshire, who had graduated at Brown University and studied theology at Princeton, came to Michigan as a missionary in the service of the Presbyterian Home Missionary Society in 1831, making his home at Marshall. Isaac Edwin Crary, born in Connecticut, and graduated

at Trinity College in that state, who filled various stations in public life, came to Michigan the next year, also making his home at Marshall. Pierce and Crary were both educated men, were both interested in the growing cause of education, and were both devoted to the state of their adoption. It is said that, neighbors as they were, they often discussed together the future institutions of the rising commonwealth. The stray copy of Cousin's Report came to Mr. Pierce's hand, who not only read it with the deepest interest, but promptly passed it on to his friend Crary, who was also deeply impressed by it. Fortunately, General Crary was a member of the convention that framed the State Constitution of 1835, and, still more fortunately, the Chairman of the Committee of Education. It accordingly devolved upon him to draft the educational article which was placed in the State Constitution.

"This article, when perfected, embraced five sections. The first section ordained that the Governor, by and with the advice and consent of the Legislature on joint vote, should appoint a Superintendent of Public Instruction, who should hold his office for two years, his duties to be prescribed by law. Section second made it the duty of the Legislature to encourage, by all suitable means, the promotion of intellectual, scientific and agricultural improvement.

"Governor Mason, in his first message, commended the school system that was to be devised for the state to the wisdom of the Legislature; but this body, at the time, took no other action than to define the duties of the Superintendent of Public Instruction, directing him, among other things, to prepare and digest a system for the organization and establishment of common schools, and a University and its branches. The Governor promptly nominated Mr. Pierce for this office, and the Legislature as promptly confirmed the nomination. He held the office six years, during which time he rendered the state the most distinguished and valuable services as an educational executive. He was the first proper State Superintendent of Public Instruction in the United States."

The vision of these early educational leaders was broad, comprehensive and democratic. They even saw plainly from a very early day the necessity for agricultural education: and in the act approved March 18, 1837, which gave birth to the University of Michigan, it is significant that instruction in "practical farming and agriculture" was specifically provided for.

Under the provisions of this act, "the Board of Regents together with the Superintendent of Public Instruction were to establish such branches of the University in different parts of the state as from time to time should be authorized by the legislature. In addition to preparation in the English language, mathematics, education of teachers and other topics to prepare students to enter the University, there should be in each of these branches a department of Agriculture with competent instructors in the theory of the subject, including vegetable physiology and agricultural chemistry and experimental and practical farming and agriculture."

Some of these branches were organized but were short lived and none of them attempted to teach agriculture. It was thus the original idea of the educational statesmen of Michigan that agriculture should be taught in the University on a par with other subjects, but it was not until a number of years later, the university having failed to establish agricultural courses, that the agitation for a separate college of agriculture was begun. It was difficult in practice to get away from the old classical models in education.

During all these early years a great many experiments were undertaken

elsewhere, both in this country and in Europe, that looked toward the teaching of practical agriculture. Many of these were undoubtedly known to the educational leaders in pioneer Michigan. According to Professor Edward Hitchcock of Amherst College, who was a member of a commission which made a report to the legislature of Massachusetts in the year 1851 of an investigation into agricultural teaching in Europe, the earliest effort in that direction was made in France in 1775 by M. L'Abbe Rosier. He called it "A Plan for a National School of Agriculture in the Park of Chambord."

At the time of Professor Hitchcock's visit there were in operation in various foreign countries over 350 schools where agriculture was taught. An in-



COLLEGE HALL BUILT IN 1856.

teresting glimpse of what a European agricultural school of sixty years ago was like in 1850 is given in the report to the Massachusetts legislature of a visit made by Professor Hitchcock to a school connected with the University of Edinburgh:

"Several rooms in the university buildings are devoted to this department. There we find exhibited numerous models of agricultural implements, and of buildings, chiefly barns and out-houses, for the farm; also seeds and dried plants, marls and soils, chemical substances, a few skeletons and anatomical drawings, and, more particularly, as many as a hundred fine drawings, mostly as large as life, of the best breeds of domestic animals. These draw-

ings are chiefly given by Professor Low, in his two works on the domesticated animals. The younger students generally fill up the period of the session by attending other classes in the university, or of private teachers, chiefly chemistry and natural history, and several of them likewise attend the course of lectures delivered in this city by Professor Dick, on veterinary surgery.

"Professor David Low of Edinburgh adds: 'I have found by experience, that it is not necessary to have a farm in connection with the chair. All the essential points of practice being previously explained, the students are prepared to enter upon the study of the subject in the fields. To this end, they usually board in the house of some respectable farmer for such a period as suits their convenience, not less, I recommend, than twelve months, so that they may see the operations of an entire season. There are numerous respectable farmers, both in the south of Scotland and in the north of England, who are in the habit of receiving pupils and instructing them in the different branches of their profession.' " (3)

Long before this, however, indeed less than thirty years after L'Abbe Rosier made his early suggestion for agricultural education in France, a farm school had already been established in this country, in the year 1804 on Thompson's Island not far from Boston, Massachusetts. It is the oldest school in this country of which I have any knowledge, and is still in operation. The present superintendent is Charles H. Bradley, P. O. Box 1486, Boston, Massachusetts.

"The first agricultural, industrial and technical school that did actual work in North America was probably the Gardiner Lyceum, established at Gardiner, Maine, in 1821, and incorporated by the legislature of the state of Maine in 1822,—the second year after it became a state. Indeed, among the very first of the legislative acts of the new state was that incorporating this school. In 1825, the legislature appropriated \$1,000 a year for three years, and in 1828 extended it for three years more. This is probably the first state grant made in the United States for agricultural and technical education. The Lyceum continued with varying success until the year 1832, when it was closed for lack of support and patronage. The institution was later opened as an academy, and subsequently the building was transferred to Gardiner as a high school, and it was subsequently burned.

"An agricultural department was organized at Trinity (then Washington) College, Hartford, Connecticut, at the time of its foundation in the middle eighteen-twenties. Horatio Hickok, A. M. (Yale, 1798), is named in the catalogue as Professor of Agriculture and Political Economy."

"Farmers' College, at College Hill, Ohio, six miles from Cincinnati, seems to have been the first American institution bearing the name of college, and continuing through any series of years, to give real attention to agricultural matters. It was not a college of agriculture as the term is understood at the present day; but it made a sustained effort, under the condition of its time. The institution started as a private literary academy in 1833, Mr. F. G. Cary, its founder, taking four pupils into his own family." (2)

"Amherst college gave instruction in agricultural chemistry as early as 1853-4, and in 1852 offered agriculture as a part of a separate 'scientific department' which it then organized. In this department, the Rev. J. A. Nash taught the agriculture, and he prepared a text-book." (2)

In 1847, ten years before the Michigan Agricultural College opened for students a boarding school located in Lenawee county, between Adrian and Tecumseh was opened by the society of Friends or Quakers. It was called

a manual labor school with a farm of over four hundred acres organized with full expectation that the students were to labor and thus pay a portion or all of their expenses. The girls did much of the house work, the boys cut wood and did some work in garden and field. No one especially qualified was employed to teach the students in this work. The plan gradually fell into discredit and most of the farm was sold. The school was later for many years called The Raisin Valley Seminary. The writer was a student in this school during its organization and for several years later.

"The 'Ohio Agricultural College' was opened in Oberlin, northern Ohio, in 1854. It continued one year at Oberlin and two years at Cleveland. The largest attendance was about forty students. It did not grow, and therefore was discontinued." (2)

I omit the mention of a number of other schools established early in various places which included agriculture in their courses of study.

Although the act incorporating the University of Michigan in 1837 made provision for the teaching of agriculture, it was not until the farmers themselves, their societies and their journals, took up the agitation seriously that anything was accomplished.

As early as February 1844, Jonathon Shearer ably advocated more thorough education of farmers in the Michigan Farmer.

But the great forces which now began to move were the Michigan State Agricultural Society and several able men who felt a deep interest in advancing the cause of agricultural education in the state. The two men who probably did most for the cause at that time were Joseph R. Williams, who afterwards became the first president of the college, and J. C. Holmes, secretary of the State Agricultural Society, who afterwards became professor of horticulture.

Beginning in 1849, the agitation was continuous and increasingly effective until the college was opened in 1857.

In an address delivered at Marshall, before the Calhoun County Agricultural Society, September 20, 1849, Hon. William M. Fenton, Lieutenant Governor, argued at length in favor of education in the science and practice of agriculture. (5)

In the first annual address before the Michigan State Agricultural Society held in Detroit, September 26, 1849, Hon. E. H. Lothrop spoke with point and force of the great need of more thorough training in botany, chemistry, physiology, zoology, and mechanics, because of their direct bearing on agriculture, and he appealed strongly to farmers to give their sons and daughters a better education.

Mr. Lothrop appeared to have entertained views regarding education far in advance of his day.

He also advocated the introduction of agriculture into the common schools.

"Make our common schools what they should be, and let the branches there taught have a direct reference and bearing upon the future business of our children. Make our common schools the nursery of farmers." (3)

On October 11, 1849, Joseph R. Williams gave a most vigorous address before the Kalamazoo County Agricultural Society, at its fourth annual fair, in which he called on all farmers to educate themselves and their children. (5)

At the close of that year (1849) we begin to hear of resolutions and memorials to the legislature. One of the earliest resolutions was prepared by Bela Hubbard and passed at a meeting of the executive committee of the

State Agricultural Society held in Jackson, December 19, 1849. (See report for 1850.) It follows:

"Resolved: That our Legislature be requested to take such legislation as shall appear necessary or expedient for the establishment of a State central agricultural office, with which shall be connected a museum of agricultural products and implements, and an agricultural library, and as soon as practicable an agricultural college and a model farm."

On January 1, 1850, Mr. Hubbard carried out the suggestion of his resolution in a strong memorial to the legislature in which he outlines, crudely, a plan for the future college. He here emphasizes the point that it should be a labor school, and that it should be connected with the University. His interesting memorial to the senate and house, follows:

"The day has forever gone by when an enlightened liberal education was deemed useless for the farmer. Agriculture has risen into a science, as well as a laborious art; a science, too, the most comprehensive of all others, and which demands not alone strong hands and bodily labor, but active, vigorous, cultivated intellect. * * * * No matter what be a man's business, the more varied his education, the better, as he thus enlarges the sphere of his mind, and multiplies the sources upon which he can draw through life, both for profit and enjoyment. But above all, an education which shall include the natural sciences, is especially important to the farmer, as in addition to their other applications, they are the foundation of agriculture. * * * *

"In this examination, the first and most important consideration is, that the Institution would be a labor school, in which the actual work performed by the pupils would be passed to their credit, in the account for their instruction. Thus the expenses would be diminished if not altogether paid. The very act of labor would be a practical application of the precepts taught, and the poor would enjoy equal advantages with the rich. The Institution should be attached to, or form a branch of, the State University, as is contemplated by the charter of that institution. The studies taught at this college, should be of an eminently practical kind.

"In foreign lands, not only is the poor man almost shut out from acquiring the bare rudiments of education, but, in a majority of cases, he cultivates the land of another, and the profits of his life of toil go to augment the wealth of some titled landlord, whose interest is to keep him ignorant. Here, on the contrary, labor is sure of its reward, and a few years of industry makes the poor but prudent laborer the proprietor of the soil he cultivates. He rises to the dignity of a free-holder. Of that reward, of that honorable rank, no potentate of this earth can deprive him. How high his privilege! How honorable his position!" (5)

Six months later, on June 3, 1850, a convention for the revision of the state constitution met in Lansing. It was fortunate that some of the members of this convention were friends of agricultural education and were not unfaithful to the cause in their convention work. On June 10th Samuel Clark, of Kalamazoo, moved the following:

"Resolved, That the committee on education be instructed to inquire into the expediency of providing for the establishment of an agricultural school and model farm connected therewith." (5)

As a result of this work in the convention an excellent provision was secured in the state constitution of 1850 — Article 13, Section 11, reads:

"The Legislature shall encourage the promotion of intellectual, scientific and agricultural improvement, and shall as soon as practicable, provide for the establishment of an Agricultural School.

"The Legislature may appropriate the twenty-two sections of Salt Spring lands now unappropriated, or the money arising from the sale of the same, where such lands have been already sold, and any land which may hereafter be granted or appropriated for such purpose for the support and maintenance of such school, and may make the same a branch of the University, for instruction in agriculture and the natural sciences connected therewith, and place the same under the supervision of the regents of the University." (3)

In the same year (1850) the state legislature began to stir. It started, indeed, a most important movement by passing a joint resolution calling on congress for a gift to the state of 300,000 acres of land for the support of agricultural schools in Michigan. Thus was begun that agitation in congress that led twelve years later to the passage of the Morrill bill, giving the states 30,000 acres of land for each senator and representative in congress for the support of schools of agriculture and the mechanic arts, under which bill Michigan received 240,000 acres of land. (5)

Two years later, (1852) another memorial from the State Agricultural Society was presented to the legislature, "praying for the establishment of a State Agricultural College."

In the same year Francis W. Shearman in his report as State Superintendent of Public Instruction gave in a measure his idea of an agricultural college, crude as it was. He also favored a labor school and said that it should be attached to the University. A part of his report is given here, because it indicates a stage in the development of the plan on which the college was organized.

"The first and most important consideration is that the institution would be a labor school; in which the actual work performed by the pupils would be passed to their credit, in the account for their instruction. Thus the expense would be greatly diminished if not altogether paid. The very act of labor would be a practicable application of the precepts taught, and the poor would enjoy equal privileges with the rich. The institution should be attached to or form a branch of the State University, as is contemplated by the charter of that institution, and having the benefit of lectures from the professors, and such other sources as may be expedient, resident professors with expensive salaries, would not be necessary.* There should also be attached a Botanic Garden, to be under the charge of the professor of Botany of the University, in which should be cultivated specimens of the trees, shrubs and plants indigenous to our State, as well as all plants and weeds, a knowledge of the properties and habits of which is useful to the farmer. The studies taught at this college should be of an eminently practical kind * * * * One prominent advantage possessed by the pupil in such an institution should not be overlooked, in the judicious combination of labor and study; resulting in confirmed health, as well as bodily vigor * * * * * On the plan suggested, no large endowment is necessary."

By this time it began to look as though the efforts of the State Agricultural Society and of the men who were so earnestly working for the better education of farmers would succeed, and the question arose as to the auspices under which such a college or school should be organized. Three different views immediately appeared; one group wished to have agricultural instruction connected solely with the University, another sought to bring it under the control of the State Normal School at Ypsilanti, while a third group wished

* Long experience has demonstrated the fact that it is more difficult to secure men who are efficient in the instruction of students in the field and garden than it is to secure professors to teach in the class room, hence they are not cheap men.—*The Author.*

to have a separate agricultural college. So eager now were both the University and the Normal School to control the new work that both of them started rudimentary work in agricultural instruction. The discussion began then as to whether agricultural education should be an integral part of the University system continues to this day, and the writer will later present the views of a number of expert observers upon this important subject.

The State Agricultural Society, with J. C. Holmes, its secretary, was the chief and most powerful advocate of a separate institution for teaching agriculture. Both the Normal School and the University opposed its plans, and soon began active agitation.

On September 21, 1852, Francis W. Shearman, Superintendent of Public Instruction, wrote a letter to the society, explaining the efforts that the State Normal School was making to give instruction in agriculture. He called attention to the clause in the organic law requiring this school to teach these subjects, and says: "A concentration of the means afforded by the State for the advancement of agriculture must be considered an object of importance, at all events, for years to come. The State Normal School has been permanently endowed with twenty-five sections of Salt Spring Lands, which will yield sufficient revenue in time, to carry out the purposes designed in its establishment." (2)

In December, 1852, Henry P. Tappan, Chancellor of the University, also wrote to the society, outlining the attitude of the University. Dr. Tappan called attention to the provision in the constitution looking toward the appropriation of twenty-two sections of the salt spring lands for the maintenance of the agricultural school, and to the contemplated connection of this work with the University, and proceeded:

"In anticipation of this legislative grant, we have accordingly organized an Agricultural School, as a part of the scientific course recently adopted by the Faculty and Regents.

"The following subjects are embraced in the agricultural course:

"(1) Daily lectures on Chemistry (elementary and experimental), Chemistry applied to the arts, meteorology and climate.

"(2) Geology and Mineralogy, and the application of the same to mining, drainage, construction of public works, etc., illustrated by specimens from Michigan, the neighboring states and foreign lands; also models and drawings.

"(3) Animal and Vegetable Anatomy and Physiology in general, the Physiology and diseases of domestic animals in particular, and the structure and habits of insects in reference to grain, trees and horticultural plants.

"(4) Organic Chemistry and the theory and practice of agriculture, the origin and nature of soils, the different varieties of manure, tillage, tools, etc.

"Lectures on these subjects will be given during the next Spring and Summer term, commencing May 1st and ending June 30th." (2)

Dr. Tappan was requested by the executive committee of the society to deliver the address before the society at its fair in September, 1853. In this address, Dr. Tappan made the following statements in regard to the province of the university: "I say, Farmers of Michigan, that our great desire is to make the University useful to you, and we are determined to do it. We will educate all your sons who wish to be educated for the different professions. We will educate those who wish to take a particular course to fit them for a particular business. We will educate those who wish to become strictly literary and scientific men. And beyond all this, we have established and will carry on an Agricultural Department for those who intend to devote

themselves particularly to Agriculture. Whatever be the determination of the people of this State in respect to an Agricultural School, we know not how to teach Chemistry, Botany, Mineralogy and Zoology, without giving a course of agricultural science. The scientific perfection of our scheme of studies demands it. We shall do this independently of any consideration as to the disposition of the lands appropriated by the State for agricultural education. Our aim is to make the University one of the first in our country, and, if we can, second to none in the world; and therefore, there is no branch of knowledge that we can lawfully omit." (2)

On March 14, 1853, a circular was issued by the regents of the University of Michigan, announcing that a free course of lectures on agricultural science would be given at the University from April 27th to June 28th of that year. The Rev. Charles Fox was announced as the lecturer on "Theoretical and Practical Agriculture." (8) In the following year (1854) he was appointed professor of agriculture in the University, but died on July 24th of that year after giving only a few lectures. He was born at Rugby, England, and educated there under Dr. Thomas Arnold, and later at Oxford. He was a clergyman of the Episcopal church. He was at one time editor of "The Farmer's Companion."

Without doubt the clearest and best statement of the case for the University was made by Alexander Winchell, Professor of Geology, Zoology and Botany of the university, in a paper presented to the executive committee of the State Agricultural Society in March 1855 and reported on pages 343-355 of the State Agricultural Society for 1854, Volume 6. It is so valuable a contribution to the subject that a rather lengthy abstract is given here.

ON THE LOCATION OF THE AGRICULTURAL COLLEGE.

"I have watched with great interest the progress of those events which have resulted in a legislative act, establishing an Agricultural College in Michigan, and locating it within 10 miles of Lansing. Michigan stands eminent among the States for the appreciative and liberal action of her recent Legislature, in making provisions for the technical education of the farmers of the State.

"I. Among the causes that have led to the destined organization of the Agricultural College, I suppose the following have been chief.

"1. Jealousy of Centralization. The American people have run into a ruinous extreme through fright at this bugbear. The citizens of Michigan manifest too much of a disposition to distribute the different public institutions of the State among the different towns of the State, and have advanced the sentiment that the University, as it now exists, is as much as Ann Arbor is entitled to. Centralization of educational resources is a far different thing from centralization of civil power and its appliances for controlling the masses. Scientific Agriculture is as pertinent to the University as Medicine or Civil Engineering.

"2. Another reason which I suppose to have operated upon the minds of the Executive Committee of the Agricultural Society, and upon others, is the fear that a sufficiently technical education would not be furnished by the University.

"I am inclined to think that such a fear would not be realized. After two professorships devoted to the specialties of agriculture shall have been created and properly filled at the University, I have no doubt that the student of agriculture will be able to learn more, and to learn it more thoroughly

at the University, than in the contemplated Agricultural College. For the purpose of furnishing our young farmers with the requisite instruction in general science, there is no real necessity for duplicating professorships of Natural Philosophy, Chemistry, Botany, Geology, Mineralogy, Meteorology, Mensuration, Leveling and Political Economy. All these subjects are as well taught in the University as they can be in any Agricultural College. The endowment intended for the Agricultural College would be sufficient to render it as a department of the University, a most efficient auxiliary in promoting the agricultural interest of the State.

"3. Another consideration which might very naturally have operated to produce the organization of the Agricultural College, is the fear that if connected with the University it could not be sufficiently under the control of the Agricultural Society.

"I conceive it not only to be natural but right that the State Agricultural Society should strive to retain the State Agricultural School under their control. They are supposed to understand best what the agricultural interest of the State demand, and ought to hold the power to prescribe the regulations of the Agricultural College.

"II. Having given briefly my reasons for dissenting from the premises which have led to the separate organization of the Agricultural College, I will now proceed to state my reasons for advocating its connection with the University.

"1. Such a connection would cause a great saving in the first outlay.

"It would save the expense of purchasing the site, and erecting the buildings. The interest on this outlay will be sufficient to support one or two professorships, even if the expenditure is reduced to a minimum.

"It would save the expense of providing library, museums, and apparatus. The sciences most nearly related to agriculture are the natural sciences, and it is precisely these sciences which demand for their successful prosecution the largest expenditures for collections and apparatus. The law prescribes the study of geology and mineralogy, but how meagerly must these branches be pursued in the absence of geological and mineralogical collections. Such collections would need to be furnished, or the instruction would inevitably be of an inferior order. But these collections already exist at the University, and what is the need of duplicating them? But they cannot be duplicated.

"All that I have said above, relative to geological and mineralogical collections, applies literally to collections of quadrupeds, birds, insects and plants. Even were it possible to give the Agricultural College a corresponding outfit, the attempt would be an unnecessary and unwarrantable expenditure.

"The same considerations apply to the library required for the uses of the Agricultural College.

"2. Such connection would cause a great saving in the subsequent support.

"I have already mentioned the fact that the outlay required for the site, buildings, museums, philosophical apparatus, laboratory and library of the Agricultural College, all of which would be saved by its connection with the University, will be sufficient to support three or four professorships. But in addition to this the Agricultural College will require, to do the work that the University now does, at least four professorships in the different branches of general science, besides the two professorships above referred to devoted to agricultural specialties, not now treated in the University courses. This amounts to the endowment of seven or eight professorships which will be

thrown away upon the Agricultural College, leaving the special agricultural professorships still to be provided for.

"3. My third reason for advocating the connection of the Agricultural College with the University, is the belief that after the college comes into full operation, and the possession of all its contemplated advantages, it must necessarily afford instruction somewhat inferior to that offered by the University.

"This belief results first, from the fact that most of the material and appliances for the prosecution of general science will always be superior at the University in consequence of its present superior furniture, as well as its superior ability to increase it in the future as circumstances may demand.

"In the second place, the learning, ability and experience of the professors employed in the Agricultural College for the purpose of giving instruction in general science will be likely to be inferior to the learning, ability and experience found at the University.

"4. My fourth reason for objecting to the divorce of the Agricultural College from the University is that the particular principles of Scientific Agriculture constitute properly an inseparable part of University instruction.

"The school of medicine has been connected with the University because the University possesses ample facilities for giving instruction in those sciences which find their application in medicine. The school of civil engineering is a practical application of the algebra, geometry, and mechanics taught at the University. On the same grounds should the school of agriculture be connected with the University; and it is not so much the interest of the University which demands it as the interest of the Agricultural School and the requirements of a sound economy.

"5. An additional reason for advocating the union of the Agricultural College with the University is that such a course would tend to the centralization and reproduction, instead of the dispersion and dissipation, of our educational resources.

"It must be kept in mind, that the time which, under the present act, will be required for putting up the buildings at Lansing, will be saved, if the College is attached to the University. This saving of time is a gain which might well enter among the arguments for such a connection.

"Finally, then, it appears clear to me, not only that the Agricultural College will derive incalculable advantages from a connection with the University, but that such a connection is even now a feasible project." (3)

Such was the vigorous statement of Professor Winchell on the part of the University. It was received with all fairness by the State Agricultural Society, being indeed presented by J. C. Holmes, the secretary, who was the staunchest advocate of the contrary plan of a separate college. In answer to Professor Winchell's arguments, Secretary Holmes, who believed him "mistaken in his premises, mistaken in his argument, and mistaken in his conclusions," quoted largely from a report of the commissioners who were appointed by the legislature, governor and council of Massachusetts in 1850 and who reported in January, 1851. I have already quoted from this admirable report. The Massachusetts commission was made up of an unusually talented group of educators and publicists. It consisted of Marshall P. Wilder, President of the United States Agricultural Society, Edward Hitchcock of Amherst College, Samuel A. Elliot, Thomas E. Payson, and Eli Warren. Professor Hitchcock visited Europe and made a study of agricultural schools in various countries and contributed largely to the report. The conclusions of these commissioners, as Mr. Holmes showed, was against

the connection of agricultural colleges with universities, and it also made the point strongly that it was necessary to teach the practice as well as the theory of agriculture, which neither the university nor the normal school was prepared to do. These early leaders of the Agricultural Society felt that there must be actual farm life and farm experience to make agricultural education effective. So valuable is this report of the Massachusetts commissioners and so influential in the early Michigan discussions, that their principal conclusions, based upon the experience of European schools, are given here:

"1. That these schools usually fail, if they do not receive efficient aid from the government.

"2. That agricultural societies are not sufficient.

"3. That theory is to be tested by practice; and such theories as will not sustain this test are to be rejected.

"4. That these schools are doing very much to promote the progress of agriculture. This was the general testimony.

"5. That to teach agriculture in the primary schools and academies is not sufficient. This does some good, but does not accomplish all that is desirable.

"6. That agricultural professorships, in colleges and universities are not sufficient. 1. Because lectures of this sort attract but few of the students of the colleges, who are looking forward to professional life. Such is certainly the case everywhere in Europe. 2. Because the two classes of students, who would thus be brought together, would have too little sympathy to act in concert, and as equals, in the same institution. 3. Because, without such concert and sympathy, one or the other of the classes of students would feel no pride in the institution; and without such an *esprit de corps* it could not prosper. 4. Because such professorships, unless numerous, would be entirely insufficient to accomplish the objects desired.

"We learn, from European experience, that independent agricultural institutions are essential to accomplish the object which is aimed at.

"In this country, the cultivators of the soil are usually the owners of it; and it is they mainly who must establish an agricultural school, if one is established, for their own and their children's benefit."

"The first question that arises is: What are the objects we may hope to attain by founding agricultural schools in the State?

"1. Such schools would furnish to all classes of the community, an opportunity to acquire a definite knowledge of all the known principles by which agricultural pursuits should be conducted.

"2. In such schools our youth would find an excellent opportunity of learning the best method of conducting the practical operations of the farm; in other words, of seeing theory reduced to practice. They would learn, also, how to labor with their own hands, for I take it such a requisition would be indispensable in these schools.

"3. These schools would form centers of information on the subject of agriculture, and from them our farmers could derive important aid. They would keep in communication with similar institutions throughout the world, and thus would learn all that might be new or important in husbandry, and spread it through the community.

"4. These schools would be the best places for testing the value of supposed improvements in agriculture.

"5. They ought to be places for making improvements in agriculture.

We ought not to expect too much in this respect, especially when the schools are new.

"6. Finally, to sum up the whole in one word, the grand object of these schools is to improve the husbandry of Massachusetts.

"Agricultural schools will aid in checking this disposition to emigration and tend to multiply the cultivated acres of Massachusetts.

"Even if agriculture is taught in our colleges, academies and primary schools, it needs some one institution devoted entirely to the subject, to give effect and completeness to the subordinate teaching, and to carry it still farther; otherwise the agricultural knowledge will be as the literary would be, if the universities and colleges of the land were taken out of the way, and only the primary schools and academies remained.

"It is necessary that such a school should be in charge of men who understand agriculture, and the wants and wishes of agriculturists, and who know what should be done to improve both." (3)

In giving this report of the commissioners of Massachusetts, Secretary Holmes also argued strongly for the establishment of a separate school. He said:

"So far then, as we are able to judge from the past experience of others, I think we may safely say that if we expect to meet with success in establishment, continuance, and practical utility of an agricultural school, it must stand separate and apart from all other institutions of learning, and upon a basis of its own. To teach thoroughly the science and practice of agriculture must be the main object of the institution, for our agricultural interest is paramount to all other interests in this state; therefore these teachings must not be made secondary or subservient to any other object." (3)

Full reports have now been given of the discussion on both sides of the question as to whether the Agricultural College should be located apart from any other school or whether it should be made a department of the University.

This is still such an important and interesting question in many states that the writer has now (in 1913, fifty-six years after the establishment of the college) secured the views of eleven of its able graduates who are now occupying important places in agricultural college work and who have had experience both in independent colleges and in colleges connected with universities. Those who are interested will find the views of these expert observers summarized in Appendix F. of this history.

In December 1854, Secretary J. C. Holmes pressed the question of the establishment of a separate agricultural college before the State Agricultural Society and the Hon. S. M. Bartlett, of Monroe, offered the following:

"Resolves, That an agricultural college should be separate from any other institution."

This was the first time that the Agricultural Society had reached a definite determination upon this question.

"Two days later Justus Gage reported to the meeting a memorial to the legislature, praying for an appropriation sufficient to purchase a body of land suitable for an experimental farm and for the erection of suitable buildings for an agricultural school, placing it upon a basis of its own, separate from any other institution of learning, and for the endowment of the same in such manner as shall place it upon an equality with the best colleges of the State." (5)

This memorial was adopted.

A petition to the legislature was prepared by a committee appointed for the purpose, asking for the establishment of an agricultural school without delay. This petition was circulated widely through the state. An original copy of this petition is before me, and folded with it is a printed slip dated Detroit, December, 1854, asking that signatures be procured and the petition forwarded to Lansing by January 10, 1855. This slip is signed by J. C. Holmes.

It was resolved that Mr. Bartlett be a committee to draft a bill for the establishment of an agricultural school, to be presented to the legislature, in accordance with the views of this committee, by them already expressed. The bill was improved in form by Hon. Isaac P. Christiancy, of Monroe, subsequently chief justice of the supreme court of the state, and also United States senator. Governor Bingham, in his message to the legislature on January 4, 1855, recommended the establishment of an agricultural school. (3)

A bill was introduced into the house on the 19th of January, 1855, by Mr. Nathan Power of Farmington, Oakland county, for the committee on agriculture and manufactures, for the establishment of a state agricultural school, which, after passing through the usual routine, was lost on February 7 by a vote of 31 to 39.

"In the senate a bill for the establishment and endowment of an agricultural college was introduced on February 3, 1855, by Mr. Pattison, of the committee on agriculture. This bill was passed on February 9 by a vote of 24 to 5. Going to the house it passed on February 9 by a vote of 52 to 13, and it became a law by the approval of the governor, Kinsley S. Bingham, February 12, 1856." (5)

The success of this bill was undoubtedly due largely to the work of Mr. Holmes. Both he and Mr. Bartlett visited Lansing in January, 1855, to work for a bill establishing the school. After a few days Mr. Bartlett was compelled to go home, but Mr. Holmes remained most of the winter at his own expense, working for the bill.

The act establishing the Agricultural College, consisting of thirteen sections, will be found published in full in Appendix A. of this history.

"No sooner had the law been passed than the work of establishing the college was begun. The 13th, 14th, and 15th days of June 1855 were spent by the committee in the examination of lands that had been offered for the purpose of the Agricultural School. There were ten proposals. On Saturday, the 16th, the committee having decided upon a location, reported in favor of accepting the offer of A. R. Burr of Lansing, which included land as follows:

"Section 13, Town 4 North, Range 2 West—45 and 1-100th acres.

"Section 18, T. 4 N., R. 1 W.—83 acres.

"Section 18, T. 4 N., R. 1 W. south of Cedar River—107 and 44-100th acres.

"Section 19, T. 4 N., R. 1 W.—385 and 12-100th acres.

"Section 13, T. 4 N., R. 2 W.—3 acres.

"Lot known as the Smith tract 53 acres.

"Making in all, 676 and 57-100th acres. Located in the townships of Meridian and Lansing."

In 1851, B. Robert Burcham built a log shanty on the site of the present armory (1913), moving his family in the spring of 1852 when he began clearing about three acres including what was later used for athletics and drill ground. A few fruit trees were set.

The price was \$15 per acre. (3)

By the legislative act establishing the college its control was given to

the State Board of Education. This board secured plans and let contracts for the erection of College Hall, 55 x 100 feet three stories and basement, a boarding hall, 82 x 43 feet, three stories high, which by close crowding could take in about 80 students, also a small brick stable, 28 x 40 feet. The construction of these buildings was superintended by S. M. Bartlett of Monroe, and with the exception of the barn they were completed by May, 1857. Meantime the faculty had been appointed by the Board, consisting of Joseph R. Williams, A. M., President and Director of the farm; Calvin Tracy, M. A., Professor of Mathematics; Lewis R. Fisk, A. M., Professor of Chemistry;



LOOKING WEST. OLD BOARDING HALL, "SAINTS REST"; COLLEGE HALL AT THE RIGHT, BOTH BUILT IN 1856.

Robert D. Weeks, Professor of English Literature and Farm Economy, and Secretary; John C. Holmes, Professor of Horticulture; and Enoch Banker, Assistant in Chemistry. May 11, 12 and 13, 1857, entrance examinations were held and 73 students were admitted. On the 13th of May the exercises of dedication took place. (5)

In this connection it is interesting to know that New York state came very near to opening an agricultural college previous to the one opened in Michigan. The state passed an act on April 15, 1853, incorporating the New York State Agricultural College which was to be "endowed by subscriptions of the people and not by appropriations made by the legislature." But subscriptions did not come in, and the death of John Delafield, the chief mover in the enterprise, delayed action, so that the Michigan college was

first established. Most likely Michigan won the priority by securing State aid instead of relying on subscriptions.

An announcement of the Michigan Agricultural College, was issued December 10, 1856, by Ira Mayhew, Secretary of the State Board of Education, under whose control the Agricultural College and the Normal School were placed. (11)

The following paragraphs are taken from this circular; they throw an interesting light upon the early conditions and requirements of the college:

"MICHIGAN AGRICULTURAL COLLEGE.

"The Agricultural College of the State of Michigan is located three miles east of the village of Lansing, upon a farm of nearly seven hundred acres. The West Wing of the College buildings, and a Boarding House, have been erected, and arrangements will be made for opening the Institution the first Wednesday of April next.

"As but a limited number of students can be accommodated, owing to the want of the necessary buildings, and as applications from the various counties of the State are entitled to preference in the order of time in which they are made, it becomes important that persons, desirous of securing situations, make their applications for admission at an early day. These may be made to the Secretary of the State Board of Education, by letter, at Lansing, any time before the fifteenth day of January.

"Age and Scholarship of applicants.

"Applicants for admission as pupils must have attained the age of fourteen years, and must have acquired a good primary school education.

"Manual labor.

"Every student will be required to devote a portion of each day to manual labor, for which he will be entitled to receive an equitable remuneration.

"Course of study.

"The course of study has been arranged with direct reference to the wants and interests of the agricultural class in our State. It will embrace a wide range of instruction in English Literature, in Mathematics, and in Natural Science. Special attention will be given to the Theory and Practice of Agriculture in all its departments and minutiae.

"Term-time and attendance.

"The first term of the Institution will commence the first Wednesday in April, and will end on the last Wednesday of October. The second term will commence the first Wednesday in December, and end on the last Wednesday of February. Students will not be received for less time than one term, unless for special reasons satisfactory to the Board of Instruction. Persons desirous of admission, should present themselves for examination at the College the Monday previous to its opening.

By order of the State Board of Education." (11)

The following general information is copied from the first catalogue of the Agricultural College published late in the year 1857.

"Admission.

"The terms prescribed to the first class of Students received were that they should pass a good examination in the branches embraced in a common School Education, viz: Arithmetic, Geography Grammar, Reading, Spelling, and Penmanship.

"Numerous applications for admission have been made from other States. By reference to the law of organization, it will be perceived that the priv leges of the Institution are not extended to citizens of other States.

"The accommodations at present furnished by the State are limited, being for about eighty Students only.

"Term Time and Course of Studies.

"The Summer Term commences on the first Wednesday in April, and terminates on the last Wednesday in October

"The Winter Term commences on the first Wednesday of December, and terminates on the last Wednesday of February.

"An ample Chemical Laboratory has been purchased by the Professor of Chemistry, inferior to few in the country, and instruction in that Science will be thorough and practical.

"Ample instruction will be given in the Natural Sciences.

"The Course of Mathematics will be comprehensive.

"The application of Science to the business and arts of life, will be practically illustrated in the field and the Lecture Room, especially where it bears upon Agriculture.

"Instruction in Ancient and Modern Languages is not included as an object of the Institution.

"A thorough English education is deemed indispensable, including Rhetoric, History, Moral and Intellectual Philosophy, Political Economy, the elements of Constitutional Law, etc., etc.

"The Farm being almost entirely in a state of nature, a very large amount of the labor of Students must at first be bestowed where it will yield little immediate profit. Had the Institution possessed a large tract of arable land, at the commencement, the earlier results would be far more profitable than they can now prove." (6)

Thus was the college launched. Its early days were not, however, without many dangers and difficulties. No sooner had the college been established than there was an effort made in the legislature to destroy it. The Hon. Reuben Goodrich thus recalls an incident in the early history:

"In 1855-57 I represented Genesee county in the State Senate, at which time there was a strong effort made to abandon the College scheme and sell the farm.

"The land for the farm had previously been purchased and one wing of the College built between 1855 and 1857.

"Upon that proposition the Legislature was very evenly divided. It looked like the scales were so evenly balanced that one vote either way would kick the beam. The friends of the measure asked for an appropriation—I think of \$40,000—to proceed with the work, and the battle was over that or the sale of the farm. The College was saved by a mere scratch, and we secured the appropriation asked for." (6)

Few people realize what the condition of agriculture in America was when the college was opened in 1857. At that time the national government paid

little or no official attention to agriculture, save a few references in the report of the commissioner of patents, and the state governments were doing scarcely more. There was no teaching of any subject connected with agriculture worthy of the name, and what is more there was little demand for such teachings. There were few agricultural journals and fewer books on the subject and these were primitive. In order to give some idea of the state of agricultural literature at that time, the writer appends to this chapter a list of the agricultural journals published in the United States and Canada in 1857 and also a list of books on general agriculture in the library of the Michigan Agricultural College, bearing date previous to 1857.



Horse barn. Begun in 1856, completed 1857. Long since used as a carpenter shop.

In 1857, systematic work in the dairy was unthought of; there was no Babcock test, no selection of bacteria for starters, no cream separator; no stock feeding with due regard to balanced rations, little practice in stock judging, none in fitting teams of students to compete at fat-stock shows.

In the west there seemed to be no call for an agricultural student to spend his time in college learning from a competent teacher anything concerning poultry and honey bees.

The connection between bacteria and the soil, the root tubercles of legumes and their agency in causing disease of plants were unknown. The chemist, with some aid from the geologist, was supposed to be the only teacher com-

petent to meddle with the science of the soil, for soil physics had then revealed no wonders.

Nowhere in America, scarcely anywhere in the world, was there a college where each student of a class pursued studies in plant histology aided by a compound microscope.

Plant histology was yet in a crude condition, and it was not thought worth a place on the program;—the wonders of modern plant pathology had not been dreamed of. There was no plant ecology; no systematic study of grasses, or other forage plants, and weeds in their relation to agriculture; no spraying to ward off or kill insects or fungi; no plant breeding or study of the evolution of plants under domestication. Nothing was known of canning fruit. An experiment station was only thought of. There were no books that a professor of modern dairying would ever consult, except as matters of curiosity or history. Most of these would be called “junk” to-day, 1913. There was no intimation of the silo.

The growing of radishes, lettuce, cucumbers, carnations, chrysanthemums, and roses under glass for commercial purposes was of little account and not deemed worthy of consideration by college students.

There was absolutely no attention paid to caring for trees or growing them for timber, but every student was expected to know how to cut down trees and get rid of them in the most economical way possible, to make room for wheat, corn and other crops that were deemed worth something.

There was nothing to compare with sociology or economics as now understood involving the consideration of transportation, taxation, trusts, and other problems of prime importance to farmers.

There was no call for special courses in any department of agriculture. No farmers' institutes had begun to arouse the people; no granges or farmers' clubs had begun “burning” over the land, warming the minds of farmers to concerted action in better methods.

I have enumerated more than enough new topics to occupy the entire time of a student in an agricultural course for four years.

Any one who has long been a teacher in a live agricultural college knows that every four to eight years there is sure to be a general breaking up and rearrangement of the studies with additions to certain lines. Every new professor soon discovers some feature of the course that he would like changed. No two men can see such things alike. Each has his preferences, depending on his training and his temperament. New discoveries, new methods, new wants of the students make frequent changes inevitable. There cannot be much that is stable or permanent.

Agricultural Journals in 1857.

At the date of opening the college to students, there were published in the United States and Canada approximately 30 agricultural journals, none of which at that time would compare in size, quality and circulation with most of those, about 500, printed in 1913. The term “agricultural journal” is intended to include journals treating of all kinds of domestic animals, all kinds of fruits, vegetables, flowers and plants.

I name a few of the journals printed today that were in existence in 1857 or previous to that date. (W.= weekly; M.= monthly.)

American Agriculturist. Orange Judd Company. W. \$1. 1842. New York, Springfield, Mass., and Chicago.

American Cultivator. W. G. James. W. \$1. 1839. Boston, Mass.

- Country Gentleman. Gilbert M. Tucker. \$1.50. 1831. Albany, N. Y.
 Indiana Farmer. Indiana Farmer Company. W. 60 cents and \$1. 1845.
 Indianapolis, Ind.
 Iowa State Register and Farmer. George W. Franklin. W. \$1. 1856.
 Des Moines, Iowa.
 Michigan Farmer and Live Stock Journal. W. 75 cents. 1843. Detroit,
 Mich.
 Northwest Farm and Home. Mr. and Mrs. Legh R. Freeman. M. \$2.
 1847. North Yakima, Wash.
 Ohio Farmer. Lawrence Publishing Company. W. 75 cents. 1848.
 Cleveland, Ohio.
 Rural New-Yorker. W. \$1. 1850. New York, N. Y.
 Tribune Farmer. S. Cushman Caldwell. W. \$1. 1841. New York,
 N. Y.

List of Books on General Agriculture bearing date previous to 1857.

To be found in the library of the Michigan Agricultural College.

I am indebted to Professor A. C. Anderson for preparing the following list of books.

- 1853, Andrews, Modern husbandry; a practical and scientific treatise on
 agriculture.
 1797, Anderson, Essays relating to agriculture and rural affairs.
 1824, Adams, Agricultural reader.
 1847, American husbandry, Vol. 1.
 Baker, Records of the seasons: prices of agricultural produce, and
 phenomena observed in the British Isles.
 1650, Blith, English improver improved; or, The survey of husbandry
 surveyed.
 Bradley, General treatise of agriculture, both philosophical and
 practical.
 1805, Bailey and Gulley, General view of Agriculture of Northumberland.
 1811, Brown, Treatise on agriculture and rural affairs. 2 vols.
 1834, British husbandry. 3 vols.
 1840, Balydon, Art of valuing rents and tillages.
 1847, Buel, Farmer's instructor.
 1847 and 1863, Buel, Farmer's companion; essays on the principles and
 practice of American husbandry.
 1857, Blake, The farmer at home: a cyclopedia of modern agriculture.
 1745, Columella, Treatise on husbandry, in twelve books. 2 copies.
 1846, 1847, Colman, European agriculture and rural economy. 2 vols., of
 each edition.
 1850-1852, Caird, English agriculture in 1850-51.
 1857, Daubeney, Lectures on Roman Husbandry.
 1764, Duhamel du Morceau, Elements of agriculture, 2 vols.
 1854, Donaldson, Agricultural biography: life and writings of British authors
 on agriculture.
 1750, Ellis, Farmer's instructor.
 1851, Emmons, Agricultural productions of New York. (Vol. 3 of Agricul-
 ture of N. Y.)
 1853, Fox, American text-book of agriculture.
 1764, Foreign essays on agriculture and arts.
 1801, Gleanings from books on agriculture.

- 1655, Hartlib, Legacy of husbandry.
 1731, Hales, Statistical essays: being an essay towards a natural history of vegetation.
 1760, Hitt, Treatise of husbandry on the improvement of dry and barren lands.
 1876 & 1802, Home, Gentleman farmer.
 1843, Highland Agricultural Society of Scotland, Transactions. 29 vols.
 1844, Hillyard, Practical farming and grazing.
 Hoskins, Short Inquiry into the History of Agriculture.
 1836-1838—Journal of the American Institute of Agriculture. 3 vols.
 1757, Lisle, Observations in husbandry.
 1846, Low, Elements of Practical Agriculture.
 1792-1892, Massachusetts Society for Promoting Agriculture. Centennial year, 1792-1892.
 1757, Maxwell, Practical husbandry.
 1761, Mortimer, Art of husbandry.
 1845, Mechi, How to farm profitably.
 1817-1820, Parkinson, Experienced farmer. 2 vols.
 1815-1818, Philadelphia Society for Promoting Agriculture. 4 vols.
 1857, Russell, North America; Its Agriculture and Climate.
 1818 & 1832, Sinclair, Code of agriculture.
 1743, Society of Improvers in the Knowledge of Agriculture in Scotland, Select transactions.
 1847, Stevens, Book of the farm.
 1800, Tuke, General view of the agriculture of North Riding of Yorkshire.
 1812, Tusser, Five hundred points of good husbandry.
 1822, Tull, Horse hoeing husbandry.
 1847, Washington, Letters on agriculture.
 Aside from these the following would also have been available:
 1850, Guenon, A treatise on milch cows; tr. by Skinner.
 1821, The Farmer's Manual by Frederick Butler, A. M.
 1848, A text book on Agriculture by M. S. Davis, M. D.

CHAPTER II

PRESIDENT WILLIAMS' ADMINISTRATION.

May 1857—March 1859.

Dedication.

A corps of professors having been chosen and the institution prepared for the reception of students, it was dedicated by the board of education to the purposes for which it was designed, with appropriate services on the 13th day of May, 1857, in the presence of Governor Bingham, several other officers of the state government, and a large concourse of citizens from various parts of the state.

In his brief remarks Hon. H. L. Miller, President of the Board of Education, said: "During the time which this Board have been occupied in carrying out the designs which the State had committed to them, they have felt strongly that everything connected with the Institution was new, and that, in pushing them to completion, they would have to undergo peculiar trials, and could look nowhere for precedents by which they might be guided." (6 page 278.)

In establishing the first agricultural college on this continent, all concerned anticipated some troubles, but none could have imagined the long years that must elapse before the college should become popular and win the support of most people of the state. It should be interesting to mention here some of the thoughts in the very remarkable address of the Hon. Joseph R. Williams, president of the institution:

"I will, at the outset, deal with some of the objections to this Institution. Men will brand it as an experiment. They will demand results before they are willing to afford aid or sympathy. Even legislators pause in maturing the plan, which in its design and nature must be comprehensive or prove abortive. They propose to afford it a liberal endowment, and place it on an immutable foundation, if it shall prove successful. They propose to allow us the range of waters when we have learned to swim on dry land.

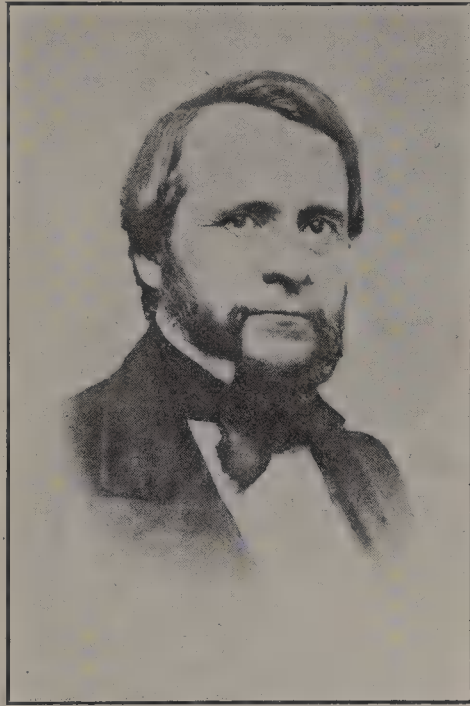
"The charge that an enterprise is an experiment has no terrors for me. The next objection urged to this Institution will be its cost, and the alleged taxation necessary to its support. The whole sum paid by the government for the promotion of Agriculture, may amount to \$250,000 per annum, out of more than \$70,000,000 expended—one two-hundred and eightieth part of the whole. We have a Senate at Washington, of the great Statesmen of the nation. A few weeks ago it revised its Committees and abolished the Committee on Agriculture. So the Senate of your country recognizes in its organization no such national interest as Agriculture.

"The United States Agricultural Society, at its annual meeting in January last, strongly urged the appropriation of 500,000 acres of land by Congress, to each of the States, for the promotion of Agricultural Education. The Legislature of Michigan, in 1850, anticipated them by instructing their delegation in Congress to ask 350,000 acres of land, for the establishment

of Agricultural Schools in this State. Let us hope, therefore, that in due time the national government will permanently endow this and similar institutions, and relieve the people of Michigan and other States from every duty but a benignant guardianship.

"The next objection is embraced in a question triumphantly asked, 'How can you teach a man to plow or to hoe?' that is, 'How can his practical skill be improved?' I contend that even in this narrow view, the mere application of labor, there is much to be learned.

"The farmer has more to learn practically about his business than any other man in the world. In fact, one-third of the industry and energies of the farmers of our country, are literally wasted in consequence of ignorance,



JOSEPH R. WILLIAMS.

and defiance of all rules of thrift and economy. The same recklessness among men in other pursuits would result in immediate bankruptcy and starvation.

"Have the wheat growers nothing to arrest and investigate in regard to (Hessian fly) this destructive enemy? A malady has been sweeping off the swine in a large portion of the middle and western States, designated after a fearful scourge of the human race, the Hog Cholera. The loss is estimated by millions of dollars. Whether caused by contagion, or whether it originates in some error of feeding, a law of the nutrition and growth of the animal is violated. Have the hog growers nothing to learn?

"The difficulties which present themselves at the very threshold of this enterprise, it will be well to consider.

"We have no guides, no precedents. We have to mark out the Course of Studies and the whole discipline and policy to be followed in the administration of the Institution. There are numerous Agricultural Schools in Europe,

but while an inspection would afford important vital suggestions, they would afford no models for us.

"Again, the Institution commences here, almost in a virgin forest, to be subdued and subverted, before it becomes an instrument to maintain the self-sustaining character of the Institution, or a means of ample illustration. The labor and the appropriation must be largely bestowed in creating what it is desirable that we should have at ready command.

"The want of a permanent endowment will act as a discouragement.



In 1857, a wooden farmhouse 'purchased with the land' was rebuilt. Later it was the herdsman's house; but subsequently enlarged, moved to the north and occupied by the foreman of the horticultural department.

In its infancy, the Institution must rely on the caprice of successive Legislatures. The adoption of a permanent policy requires a stable and reliant support that will carry it through adversity, regardless alike of the frowns or smiles of indifference, ignorance or malice.

"Friends and enemies will demand too much, and that too early. The acorn we bury to-day, will not branch into a majestic oak to-morrow. The orchard we plant this year, will not afford a harvest of fruit the next.

"It is proposed to do for the farmer what West Point does for the soldier; what the recently established Scientific Schools of our country do for the

machinist or engineer, or the Medical Course of studies does for the physician. For the Board of Education to proclaim now a fully matured plan is impossible. Experience may demand a different policy from what now seems imperative.

"An amount of labor that will invigorate without fatiguing the system ought to be as profitable and exhilarating as it is necessary.

"At the outset we are met with the objection that all attempts at associating labor with the acquisition of knowledge, in seminaries of learning, have proved failures. In the Polytechnic Schools of Europe, and at the Military Academy at West Point, in our own country, the student is often engaged in severe physical exercise for many hours daily.

"But if manual labor has failed in all other Colleges, it ought not to fail here, where it is inseparably connected with the acquisition of knowledge. Thus allied, the employment should be a charm instead of a drudgery. Practical labor in this Institution is the vital, cementing, invigorating influence that will give it dignity, and it is hoped, complete success.

"An Agricultural Library should be gathered here, more perfect than any which the country now affords. All knowledge relative to the Agriculture of the past, and its history, its progress, and its condition in modern states, should be accessible to the students. The library should embrace a wide range of science, law, literature, history, philosophy, medicine, etc. The library should, therefore, be a noble and comprehensive one.

"A Museum of Models of Agricultural Implements, domestic and foreign, should be preserved. The crude implements of past times, and of other countries, and those used by the most benighted toilers of the present age, should be collated, side by side with the ingenious, light, and graceful implements of our own era and country.

"A Chemical and Philosophical Laboratory, second to but few in the country, is already obtained as an indispensable aid, even at the very commencement of the Institution."

"Cabinets of Natural Science should be collected, and illustrative specimens of the mineral and vegetable kingdoms, especially of the State of Michigan.

"Specimens of Animals, Birds, Fishes and Insects should be preserved, especially of all animals and insects that either destroy our crops or infest domestic animals and fowls, that the student may have ample opportunities to study their nature and habits, and if possible discover means to arrest their ravages, and effect their extirpation.

"If Agriculture has not become, as it ought to be, a great central Science which all other sciences should aid to enlarge and promote, certainly Horticulture deserves to rank as one of the Fine Arts. The Institution will embrace, therefore, a Horticultural Garden. An impressive lesson will constantly present itself, of how tastefully and attractive a homestead may be rendered at a trifling cost. The garden itself will afford living, growing, gorgeous illustrations for scientific examination.

"First and foremost, it is the instrumentality by which the students can earn a portion of their education, and in the meantime ought to afford a perpetual example of what high intelligence in the laborer, obedience to natural laws, and the most thrifty culture, will produce.

"The question spontaneously comes to the lips even of friends, 'What Course of Instruction is proposed to improve the farmer?' Here, again, details must be conformed to experience.

"First, we would begin with the farmer himself. It has been aptly said,

that the only part of European agriculture that has not been improved, is the man himself who tills the soil. Now, there is where we ought to begin. The farmer ought first to be a sound man physically. He should be taught the laws on which his own life and health depend. He should have capacity for thought and action. Morally, physically, intellectually, he must be a man before he can be a farmer.

"Physiology opens a wide field of study to the farmer, for on the observance of its laws depend the life, health and growth of all animal and vegetable nature. A violation of those laws results in decay and ruin; obedience to these meets with sure reward; defiance to those laws is the ill luck of poor farmers—observance of them is the good luck of the opposite class.

"A farmer should receive instruction in the Veterinary Art from competent instructors, and when the Institution is brought to something like maturity, the farmers of the whole country should be invited to bring their diseased animals together, that they and the student may derive reciprocal advantage from treatment under skilled hands.

"Entomology, the Science relating to insects, is worthy of the farmer's attention.

"Thus the field of research for the farmer has no boundary. New subjects, each in itself sufficient to engross years, constantly crowd upon the attention. The difficulty will be only in the selection. Master all human knowledge on the subject, and yet the greatest truths remain unfathomed. Do you understand any of those influences and affinities by which a plant germinates and grows? Do you understand the process by which a single flower blooms? Do you understand how the clover, vivified by the genial influences of light and heat, gathers from the earth and the air, the rains and the dews, contributions that make up the growth, and restored to the earth, renovates its exhausted condition? These occult mysteries are beyond your comprehension.

"Nature hugs within her bosom her most vital lessons, undivulged. The Newtons and Keplers of Agriculture are yet to appear. The contemplation of these facts should awe us to humility.

"The chief end and object in educating the farmer is to teach him to subordinate himself, and all animal and vegetable life around him, to those inexorable laws, moral and physical, the violation of which meets with swift retribution.

"A farmer should perpetually bear in mind that one generation of men hold the earth in trust for the next. We are all linked indissolubly to the past by obligations of gratitude, and to the future by the glowing aspirations of hope. Without the recognition by preceding generations of the ties of dependence and affiliation, we could pluck no fruit from the orchards planted a century ago.

"A great advantage of such Colleges as this, will be, that the farmer will learn to observe, learn to think, learn to learn. The farmer isolated and engrossed with labor, feels not the advantage of constant discussion and observation. That discouragement will be partially neutralized here. Every man who acquires thoroughly even all the information attainable in a College like ours, should become a perpetual teacher and example in his vicinity. Thus one of the grand results should be a far wider dissemination of vital Agricultural knowledge.

"I have little fear of ultimate failure. If one Institution of this kind should languish, the indications are numerous that the auspicious moment will arrive when success will be achieved. Where a great need is felt and appreciated simultaneously over a great country, it is merely a question of

time when it shall be successfully met. But there must be a tolerant and hearty co-operation of the people of the State and its functionaries, of the successive students, and of the officers of government and instruction, to whom so sacred a trust is confided.

"As to this youthful State belongs the honor of establishing the pioneer State Institution of the kind, and initiating what may prove one of the significant movements of the age, may she enjoy the glory of its complete and ultimate triumph." (6)

Kinsley S. Bingham, Governor of the State, followed with a brief address. I quote a few paragraphs:

"The people of the State of Michigan have acquired honorable distinction for their zeal and success in the cause of Education.

"Yet, notwithstanding the system of education seemed so complete, a deep-seated and universal feeling prevailed throughout the State, that the great staple, Agricultural Interest, was neglected; that while Professorships had been very properly established to teach Astronomy, Civil Engineering, Medicine and Law, we needed a school expressly adapted for the farmers' sons, to teach the ennobling science of Agriculture. This prevailing sentiment prompted the Convention of 1850, for the revision of the Constitution, to engraft upon that instrument a provision that, as soon as practicable, the Legislature shall provide for the establishment of an Agricultural School. Gentlemen, if this experiment (for such we must admit it at present to be) shall prove successful, Michigan, first in many other matters of progress and improvement, will be justly entitled to the high honor of having first established a College to teach the theory and practice of Agriculture. This interesting event, then, inspiring us with hopes of promise for the future, is cause for mutual congratulation.

"Formerly, farming was considered a business requiring mere physical power, with which the principles of natural science had little or nothing to do. To plow, to sow, and to gather the crop, was the general routine of farming operations, regardless of the poverty which the practice was inflicting upon the soil and upon those who owned it.

"Thus, with the liveliest anticipations, and highest hopes of success, we welcome, the FREE AGRICULTURAL COLLEGE among the institutions of learning of the State of Michigan, and bid it God speed. Long may it flourish, an honor to its founders, and an honor to the State." (6)

James H. Gunnison, who owns a farm near Dewitt and now lives at 513 Butler St., Lansing, tells how his father hitched up a team and brought five of the boys over to the dedication exercises. He and his brothers, Alfred and Warren, were students of the first class entering college. The faces of President Williams, Governor Bingham, Professor Fisk, Professors Weeks and Goadby and Professor Calvin Tracy are still in his memory. There were but three buildings set among the trees and surrounded by huckleberry bushes. These were College Hall, "Saints Rest" and a brick barn. The studies taught were literature, mathematics and chemistry. The agriculture was all practical work. Mr. Gunnison drove an ox team.

THE COLLEGE AND THE STUDENTS, 1857-1860.

The following is a very liberal quotation from an address given at the semi-centennial celebration of the Agricultural College, by Hon. Charles Jay Monroe, who was present at the dedication in 1857 and remained a student until 1860. In 1895 he became a member of the State Board of Agriculture and for some time was the president of the board.

The address is a vivid account of the experience and observation of an active student:

"The College, when I first saw it May 10, 1857, consisted of a tract of mainly timber land without an acre fully cleared. A few acres had been slashed down and the logs and brush cleared. On every hand were old stubs and partially burned trees. The fire had scorched the timber next to the clearing, so that at every point of the compass to which you turned you beheld dead and blackened trees which presented a most desolate scene.

"College Hall, a dormitory, and a small brick barn constituted the buildings. The old dormitory, known for many years as "Saints' Rest," stood a little east of the present site of Williams Hall, and was burned in 1876. These buildings were surrounded by logs and stumps, the carpenters' and masons' leavings, and other rubbish. The roads to the buildings were lined with stumps which had been dug or pulled out and in some cases partially burned.

"The road from the College to lower Lansing was fairly good, judged by the road standard of those days. Lansing consisted of three parts, Upper, Middle, and Lower, and the distances and partition woods between them were sufficient to make them distinct towns.

"The travel to the College was mainly from Middle Lansing, via Michigan Avenue. This street was usually a mud hole from the hotels to the College, particularly in the spring and fall, and was lined with timber except now and then a small opening made by new settlers. In this connection I wish to call attention to the large stone beside the road with a fair-sized tree seemingly growing through it. As I remember it, the crack was then small and only partly across the stone, and the tree was about the size of a finger. It was the frequent resting place on the trips to and from Lansing.

"Lansing had no railroads. The nearest were the Detroit and Milwaukee at St. Johns, and the Michigan Central at Jackson. Most of the boys came by these routes. From Jackson to Eaton Rapids there was a plank road, but it had so many broken or missing planks that for a good deal of the way the square edges of the plank made it worse than the round legs of a corduroy. From Eaton Rapids to Lansing it was mainly mud holes. We regarded ourselves as fortunate if we got our trunks through, even by carrying a pole or rail for considerable distances to pry the old stage out of mud holes.

"It is fair to state that the vacations in those days were in the spring and fall, and so at the seasons of the year when the roads were at their worst.

"The dedication exercises were held May 13, 1857, in the college room usually known as the chapel. This room has been the general meeting-place for all sorts of gatherings for fifty years. At the dedication it was crowded to its limit, and many stood about the doors, both inside and out. With two others I stood in the south center window, the platform being on the north, or opposite, side.

"The next day we again assembled, and all who had passed were assigned rooms. There were four students to each room, to do their own chamber work. Within a day or two we were again called to the chapel by the president. He stated that for the present he wished to assign the work as far as possible to those familiar with the work designated. A show of hands were asked, for those accustomed to driving horses. Probably four-fifths responded. After a few questions, the teamsters were chosen. Next, those familiar with oxen, a less number, responded. I was named to drive one yoke. The call was continued until nearly all the different sorts of work were mentioned and someone of those lifting the hand would be designated.

"The first work, in which nearly all took part, was cleaning up the carpen-

ters', painters', masons', and plumbers' rubbish, and clearing away the logs and brush near the buildings. As for myself, I continued to drive the oxen through the summer of 1857, mainly on the stump machine. In the summer of 1858 I drove the same team as a logging team, and they were extra.

"Visitors coming to the logging field who were familiar with that sort of work were sure to notice and admire the team. Those remembering back to the days when clearing and logging were a prominent part of the work in Michigan will realize that a good logging team was highly valued, and their ability to make a log snap was often praised.

"I recall an incident which occurred at a near neighbor's. A Mr. Seaver had an extra yoke of oxen of which he was very proud. As I was passing the field with several friends where he was logging, one of the party expressed the wish to drive out and see the men roll up a log heap. I introduced my friends and stated they would like to see a heap made; I also remarked that I was sure they would like to see his oxen draw the logs. He hitched to a long one and waved to everybody to keep away from the switch end, then sprang toward the oxen with raised whip, calling out, 'Haw, Buck.' This brought the oxen toward him and he, dancing back to keep out of their way, stammered out, 'I beg your pardon, I beg your pardon, Buck, I meant, Gee.'

"In the winter of 1857 and 1858 chopping was the principal work. Over a hundred acres on the south side of the river was slashed into windrows and burned the following summer. We worked in three divisions, two and one-half hours each—first, 7 to 9:30; second, 9:30 to 12; third, 1:30 to 4. The second was expected to be out in time to take the tools of the first, the rule being that the same boys should follow each other in the use of the ax.

"Word was received that a bee tree had been found and that the boys of division number one were having a treat of honey. The boys of number two abandoned the usual custom of marching in Indian style of single file and struck a double quick for the scene of feasting. The bridge was a large fallen tree reaching from bank to bank. Ordinarily it was adequate, but on this occasion when the whole squad were having a neck- and neck-race and all were wanting to cross at the same time, it resulted in several taking a forced bath before the coveted feast. Arriving at the scene, a pitched battle occurred which discounted a college rush. Besides, the bright sun warmed up the bees, and they with natural patriotism sought in a very stinging manner to defend their home and honey. They inflicted a good many wounds which soon became prominent and remained so for several days. Like all great battles the sad scenes came afterward.

"In 1858, the most notable and impressive event of the season was the fever and ague. The plowing and stirring of a hundred acres or more of new land with all its decaying vegetation turned loose an immense amount of miasma. The remark often made, 'that it was thick enough to cut with a case knife,' had much truth in it. In the latter part of August and fore part of September there were 70 out of 100 students unable to attend classes, at least they could come only every other day, as the fever was mainly intermittent. That is, one day the patient felt as well as ever, and the next, never felt worse. The main consolation the sufferer got was the frequent assurance that it was only the ague and nobody ever died from it. Classes were greatly interrupted and in some cases suspended for a short time.

"As the work of the four previous terms had been mainly such as I had been accustomed to in the childhood home—it being heavy timber and the clearings commenced about the time I was born—I got little that was new or

helpful, except as the continued doing of any task makes one more expert in it. But the work, experience, and observation which I had in the summer term of 1859, which included the gathering, labeling, and arranging of seeds, I have felt were of great advantage to me, for which I have always been grateful.

"The 'Fem Sem,' a short name for the Michigan Female Seminary at Lansing was in charge of the Rogers Sisters. There was some visiting with the girls at their college during the summer of 1858, possibly started and encouraged by the fact that Professor Tracy, in whose charge the over-seeing of the boys principally was, was in the habit of visiting one of the seminary teachers, to whom he was subsequently married. The mutual interest and visiting between the two colleges were greatly increased in October, 1858, when the M. A. C. boys were invited to a husking bee at the 'Fem. Sem.' A field of several acres of corn, as I remember, was standing in the shock just east of the buildings, now used for the School for the Blind. The night was lighted by one of those brilliant harvest moons and also by the smiling faces of the 'Fem Sem' students who acted as partners in the husking. The number of red ears found was quite remarkable, in fact so many and so well scattered over the field were they that they occasioned a good deal of querying, some declaring that the planter must have had fore-knowledge as to the future huskers. When the corn was all husked and picked up, and the stalks bound and set up, we were treated to a bountiful lunch and then to a jolly social time, not soon to be forgotten. We were allowed to linger into the small hours, probably on account of the good work done.

"Our sports were mainly of the country sort, 'one' and 'two-old-cat' ball games, running, hop-step-and-jump, 'pom-pom pull-away,' tag, and leapfrog. Some of them were not very dignified; still there were no smashed noses, cracked heads, maimed limbs, nor any killing.

"The College was a typical Michigan pioneer in starting in the woods, in opening up roads, in logging and burning green timber, much of it in the wet season of the year, in the pulling of green stumps, and in ditching where an ax was as important as the spade or a shovel. It was hard work for the boys and expensive for the College. I recall one large oak stump with a large tap root and a mass of others needed to sustain the tall sturdy tree, cut from it. It was only a few feet from the front door of the boarding-hall. Digging away the dirt and cutting off the roots required about ten days' work. Then it took the stump machine to roll it out and two yoke of oxen and four span of horses a half-day to draw it to the river bank near the president's house, costing about \$20."

Concerning the college in its primitive period, I continue by quoting from Oscar Clute '62, the State Agricultural College, in circular of information, No. 4, 1891, Bureau of Education, p. 105.

"From the first the instruction in the college classes was of a high order. Calvin Tracy had a clear and incisive method as a teacher. L. R. Fisk, now and for many recent years the successful and honored president of Albion College, was then a young man, energetic and enthusiastic in his work as chemist. Professor Weeks and Mr. Banker gave able help. At the beginning of the second year came T. C. Abbot from the principalship of the High Union School in Ann Arbor. The students came largely from the farms and villages, though representatives from the cities were by no means wanting. They were about like all students, having the usual amount of boy nature; rooming four in a room in one small dormitory; meeting all winter in the chapel at 5:30 in the morning for prayers; reciting in company

in the few classes that at first were formed; swinging the ax side by side in felling the great oaks and beeches that stood thick all over the college farm; watching in eagerness the lapping fire leap through the dry leaves and branches when the match was put to the fallow; laughing with the unquenchable jollity of youth at the grime and blackness that transformed their boyish faces into something strange if not rich as they hauled together the blackeared logs after the first burning; working in gangs with the stump machine to pull the stumps that frustrated the first feeble attempts at farming; shut off by location from almost all association except that of the college itself; taking long walks together through the woods, where the ghostly beech-drops and the showy orchis grew; and to the not distant swamps, where the feet sink out of sight in the deep sphagnum; and the delicate gold thread, and the mysterious sun dew, and the flaunting blooms of the pitcher plant, and the softer beauty of the splendid lady's slipper soon filled their botany boxes with richest treasure. What wonder that there grew up among the boys a warm fellowship with each other and with honored professors, and a strong and loving appreciation of the school that, in the very limitations of its first beginnings, offered to them better conditions for the acquirement of culture and character than mere lectures, libraries and laboratories can give."

Concerning the early days, I quote briefly Hon. Edwin Willets in his inaugural address in 1885, as President of the College: (See Report, Michigan Board of Agriculture, 1885, p. 24.)

"It was a pioneer institution in the literal sense; not only was it the first of its kind, but it began at the stump, so to speak. The first tools needed were an ax to fell a tree and a spade to dig a well. It has gone through all the stages of pioneer life; it has had its corduroy roads, its chills and fevers, chills predominating; it was almost a generation 'getting out of the woods;' so that its primal energies were in a sense wasted in subduing a farm, in taking a large tract of land in a state of nature and fitting it to become a 'model farm' instead of taking improved land all ready for experiment."

Some idea of the progress of the college during its first year may be had from the first report of President Williams, dated at Lansing, April 1, 1858, printed on page 313-324, Michigan School Report for 1857.

"For twenty-five vacancies, more or less, which will exist at that time, we find on our files about two hundred applications, and letters of inquiry, with a view to entering the institution. Many of the applicants are from other states. Inasmuch as we are limited in accommodations, the vacant places, in accordance with the requisitions of the law, will be distributed to such qualified applicants as appear from counties not represented.

"Amid these difficulties it became necessary to organize an Institution on a new basis, and to harmonize a System of Study with a System of Labor.

"About sixty acres of the farm have been brought under cultivation. About eighty acres more will be cleared for crops this spring. It has been our policy to clear and prepare the land for crops, as we proceed, much more thoroughly than is usually done on new farms, in order to have it in readiness at the earliest possible day, for varied and interesting modes of culture, for trial of improved implements, and for comparison of varieties of seeds and breeds of cattle.

"For summer crops we had an abundance of potatoes of the finest description, sufficient for use of the Institution, and seed the present season, turnips, vegetables, and a few acres of corn and Chinese sugar cane, the latter planted late for fodder only. There were no failures in these crops.

"The brute working force consists of two pair of horses and six pair of oxen, all sound, in good health, and excellent condition for effective service during the coming season. We have also seven cows upon the farm.

"The Institution is well provided with necessary ploughs, harrows, wagons, carts, sleds, axes, shovels, and horticultural implements.

"No land being in a fit state of preparation, orchards were not commenced during the last season. An extensive farm orchard designed for raising apples for market, will be immediately commenced, and also a separate orchard designed especially to supply the wants of the Institution.

"The books are principally Agricultural, but in that department it is scantily supplied. In the miscellaneous department it is lean and insufficient. It consists of donations from the State Agricultural Society, from the departments at Washington, and from a few public spirited individuals and



Looking north. Dwelling built in 1857, the porch was added much later; now 1913, occupied by Dean Bissell. Faculty row No. 4.

publishers. In response to a circular addressed to the publishers, twenty-eight Agricultural periodicals, from all parts of the United States, have been gratuitously furnished the library and reading room.

"Several of the students are skilled in the use of tools, and during the last winter, unaided, erected a bridge on the estate, across the Cedar River.

"During 1857, four dwelling houses for use of the President and Professors have been erected. A small wooden farm house, purchased with the land, has been re-built and prepared for occupation. The main College building has been re-roofed and the interior of the same reconstructed. New and sufficient appliances for cooking with steam have been introduced into the Boarding House, and an unfinished stable completed.

"The work before us, was no less than the successful organization and establishment of the first Agricultural College on the continent. That work is accomplished. Indecision, hesitation or division of the funds by your Board would have so interrupted as to break down and destroy the Institution.

"Such is the condition of the Institution at the commencement of the Second year, and the Third Term of its history. These brief details fail, perhaps, to answer the questions most vital and interesting.

"A Bill has just passed the Legislature of the youthful state of Iowa, creating an Agricultural College. This is the Second State Institution of the kind in the United States. Agricultural Colleges, the joint work of individual subscribers, and the respective Legislatures, are in a State of progress, and will probably all be set in operation during the next eighteen months, in the States of New York, Pennsylvania and Maryland.

"The experiment in which we are engaged is not therefore tested for Michigan alone, but for the Agricultural population of the whole Union. The State is everywhere lauded as exhibiting a bold and comprehensive Statesmanship in the establishment of this college, and the public press, as well as a wide correspondence, statesmen on the one hand, and illiterate,



Looking north. Dwelling built in 1857, kitchen and porch added much later; now, 1913, occupied by Dean Shaw. Faculty row No. 5.

strongminded citizens on the other who equally well however comprehend its necessity and its mission, express their cordial sympathy in its prosperity.

"The first palpable and valuable result, so far, is successfully harmonizing a System of Labor with a System of Study. This is vital. A paramount object is, to enable the student to support himself by his own labor, while acquiring his education. At the same time, it is necessary to make that labor attractive and invigorating.

"It was a dangerous experiment to establish such an Institution on any farm not already, in part, at least, capable of the highest cultivation, and ready to yield the maximum of production under intelligent culture.

"In conclusion I may add, that the Institution should be good enough for the proudest and cheap enough for the poorest."

For December 1, 1858, Report of the Superintendent of Public Instruction, at the close of the 2nd year, Pres. J. R. Williams' report contains the following:

"A Veterinary Professorship is fundamental to the very idea of an Agricultural college.

"A large number of students were compelled to leave the institution in consequence of sickness, and many who remained were invalids. At one time, but about thirty were in the field, and as each was employed but three hours, they were not equal to eight able-bodied men. The discouragement was almost equally severe for several weeks, and extended with more or less severity over a period of three months.

"During the summer one hundred acres of heavy timbered land have been logged and cleared. Stumps have been extracted, mostly by Willis's Stump Machine, from eighteen acres of land. One mile and a half of tile drain has been laid, some of it through quick sands, and through places presenting formidable obstacles to drainage. Students did not shrink even from this labor. Land where the water had stood from time immemorial at depths varying from one to three feet on the surface, is now brought under cultivation, and produced good crops of corn and turnips the past season.



Looking north. Dwelling built in 1857, later enlarged, still later partially burned and rebuilt; in 1913 occupied by the Professor of English. Faculty row No. 6.

"The Institution has met with serious calamities. There is a great misapprehension, however, in the public mind relative to its cost. Of the aggregate cost of \$109,792.73, at which it will stand in January next, \$56,320.00 has been or will be derived from the Salt Spring Lands, which cost the people of Michigan nothing. It is a significant fact that for three miles from the college, in every direction; land has risen in value varying from ten percent to one hundred percent.

"The law creating the Institution does not empower the faculty to confer degrees. [That power came in 1861.]

"The last Legislature reserved the Swamp Lands in the four adjacent town-ships for the use of the college. They embrace 6961 acres. Certainly at that time the ideas for conducting and supporting an Agricultural College were very crude.

"In their last annual report, the Board recommended that the care of the college be transferred to a State Board of Agriculture, believing that such a Board might win for the Institution a fuller sympathy and support of the farming population, and also to be able to devote more special attention to its interest.

"In teaching Agriculture the Board would also suggest whether there might not be established a lecture term, to be held in the winter, in which courses of study should be given by the several Professors, on the topics of their department. Large numbers of farmers would find leisure in the winter to attend a course of lectures on farming. And while the college was thus extending its usefulness, it would be attracting many students who might conclude to pursue its full course of studies."

I quote C. A. Kenaston, acting secretary in 1863.

"But President Williams began work so new, and so difficult in itself, and made so much more difficult by the many limitations which hedged in the early days of a college established in the woods, that troubles soon



Looking west. Dwelling built in 1857; the porch added much later; now, 1913, occupied by the Professor of Botany. Faculty row No. 7.

arose. They culminated in his resignation in March 1859, when he had been president of the college less than two years."

Several references are made elsewhere concerning the administration of President Williams.

"The chief fault of the Institution was the lack of practical instruction in agriculture. The Board knew not where to find a man for this work.

"These two years were years of severe trial to the Institution. No service more pure and unceasing could be rendered, than was given to the interests of the Institution by its President, but Mr. Williams had been in political life, and the College was made at once the object of bitter party feeling. The buildings had been insecurely made, and large outlays were demanded to

render them trustworthy. A wet spring and severe drought afterwards caused meagre crops. Articles of every kind were unusually high during the building and furnishing at the College so that at the end of two years the original grant of \$56,320, and an appropriation of \$40,000 had been spent, and an additional debt incurred of \$13,472.73."

The college was just beginning and had no professor of agriculture. Some flat turnips were to be grown in a spot where long since Howard Terrace and the Woman's Building were erected. Oscar Palmer, a student, was told to sow the seed. He came to the college unacquainted with farm work. When asked how much seed to sow, President Williams evaded the answer by "paddling around it." The seeds were sown a half bushel to the acre, more or less, and they came up thick, very thick, and failed to spread at the bottom as well grown turnips ought to. The turnips were narrow and slim at the expense of broad diameters. They couldn't grow in any other direction. It was up and down or nothing. The patch was in sight of the highway where farmers could see it and make comments. For this act the college received a lot of left-hand advertising and gained a lasting reputation. Twenty years after this famous crop of turnips was grown a student in a remote part of the country while teaching a winter school was told this story to illustrate the fact that the professors at the college didn't know anything about farming.

One day when this same boy, Oscar Palmer, was sent to the field with the oxen to pull stumps, the oxen would "gee" when he wanted them to "haw." Picking up a board, he applied it with vigor to them, and they, like sensible brutes, ran away. This short experience satisfied him that the farm was not the place for him. He soon left.

The Hon. Oscar Palmer was long afterward chairman of the house committee on the Agricultural College and later a member of the State Board of Agriculture.

A pear orchard was planted in a hollow instead of on a hill, the designer thinking that to be the best way, and consequently during the first severe winter the lake of cold air killed most of the trees.

One of President Williams daughters referred the writer to Albert E. Macomber a student at M. A. C. in 1857-59. He is an attorney of Toledo, Ohio, and was intimate with the family. This is his letter: "I am glad to hear from you again, and doubly glad to learn that you are engaged in preparing a History of the Michigan Agricultural College.

"I think no History of the Michigan Agricultural College will be complete which does not recognize and give due credit to his [President Williams] services to that institution and to the cause of agricultural education.

"In my judgment he was the creator of that school in Michigan, and possibly more than any other one man is entitled to the credit of the Morrill Bill of 1857. He was the member of the Constitutional Convention in 1850, and secured the Section making it mandatory upon the legislature to act. He followed the matter up in 1855 in the legislature of that year, and in 1861, as a member of the senate, secured the reorganization of the school on a larger and more promising basis.

"His address, at the opening of the Michigan School and his eloquent address the same year before the State Agricultural Society of New York, were leading campaign documents. He spent a part of the winter of 1857-8 in Washington, laboring incessantly with members of congress for the passage of the Morrill Bill; and in my judgment, furnished a good part of the material of Representative Morrill's speech, made on the introduction of that Bill

in the House of Representatives. This speech was full and elaborate, and as the Congressional Record shows was the only carefully prepared speech made at any time in either House on that question. As Editor of the *Toledo Blade* he had acquired great influence in building up the Republican Party, and his influence and acquaintance was very wide.

"You mention that President Williams ran over the appropriation—got discouraged—expected to be elected to the United States Senate. The facts are, that the limited funds, the want of intelligent support by the state Board of Education, and the appointment of certain teachers, such as Fisk, Tracy, Bancker, not one of whom had the remotest conception of the scope and purpose of the school—were enough to discourage any man. But President Williams was not discouraged; his faith and prophetic vision were too great for that. He decided not to further wrestle with such men. Another line of action was adopted; he resigned and returned to his former home county, St. Joseph, (in Constantine he had been the proprietor of a large flouring mill) where he was held in the greatest esteem and on the tip was promptly nominated and elected to the State Senate.)

"He secured the Act of March 15th, 1861, entitled—'An Act to Reorganize the Agricultural College of the State of Michigan, and to Establish a State Board of Agriculture.' The Act provided for the first Board, designating six faithful men.

"Then came the War and his untimely death in June following. This explains the historic break—the four long years of war—engaging all attention—new men to the front, and the old in part forgotten. I hope you will make good this omitted chapter. It will be an important part of your history, and Michigan is entitled to the credit of the pioneer work which led to the Morrill Bill of 1857, and to its final passage in 1862.

"I may add that Horace Greeley was a warm personal friend of President Williams; Greeley wrote to him 'I would sooner be President of the first State Agricultural College than to be President of the United States.' If you have access to files of the New York Tribune, 1857, and 1858, you will find, I am sure, some material."

Mr. Macomber continues—"Next to the abolition of slavery, this college land grant act is held by many as the most important and far reaching measure of his (Lincoln's) administration. Signed, July 2, 1862.

"The Michigan School of Agriculture, for so it was modestly designated in the state constitution and in the early legislation, rested at its start upon the proceeds of the sale of twenty sections of what was known as salt spring lands under the legislation of 1855 and in obedience to the authority and direction of the constitution of 1850. In 1853 the legislature petitioned congress for an appropriation of public lands for a school of agriculture, but the request was not granted. Again in 1858 the State Board of Education, conjointly with the faculty of the school, made a like petition to congress for the same purpose and sanctioned by the legislature.

"It is not too much to say that the constant pressure brought to bear by Michigan upon congress, led to the introduction of the Morrill bill in December, 1857, and its approval in 1859. (It was promptly vetoed by President Buchanan.) This pressure upon congress was made more effective by an appeal to leading men in agriculture and broad minded statesmen throughout the country to sustain so important a measure. What was at first a local experiment and a state measure evolved into a national policy approved in 1862 by both houses of congress and by the president of the United States.

"The Civil War and the grave questions which followed, delayed action

under this law in many states for several years; but later the whole country awoke to the importance of the measure and the several states have vied with each other in liberal tax levies to supplement the national endowment."

Mr. Macomber sends a copy of a circular prepared by President Williams and sent out by hundreds, the mailing being done by Macomber himself and C. J. Monroe, both of whom were, at that time, students of the College. I extract notes:

"Agricultural College,
Lansing, Mich. Jan. 11, 1858.

"*Editors Cincinnati Gazette*.—You have doubtless noticed that sundry memorials have been presented to Congress asking grants of land for the purpose of establishing Agricultural Colleges in the several states of the Union. This Institution has asked a grant on its own merits. Mr. Morrill's Bill giving for each Presidential elector, to a State, 20,000 acres of land, is referred to the Committee of public lands in the House. There seems to have been a simultaneous movement towards this object throughout the country, and I understand that earnest recommendations will be passed upon the subject, by the United States Agricultural Society at their annual meeting at Washington, the present week. * * * *

"It has become the settled policy of the Government, to grant lands for Educational purposes.

"Some men may imagine that these institutions are novel. So far from it, there are about 500 Colleges, Schools and Model Farms now existing in Europe, and in successful operation. Ours, I believe, is the first State Institution of the kind in America, but New York, Pennsylvania and Maryland have all organized Colleges of the kind. In Virginia, South Carolina, Ohio, Iowa, and Wisconsin, desperate efforts are being made to establish them. But in order to prove successful, they must have some reliable endowment. They must be rendered independent of the caprice or prejudices or ignorance of doubters. They must be independent, so that they can go on boldly and strongly. All such institutions, starting out on a career, will have enemies without and within. Neither the State, nor public individuals will permanently sustain them. Demagogues in local legislatures will always be attacking them.

"I have no doubt a bill would pass this very session of Congress, if the friends of the measure would give it earnest support. Cannot you advise your readers to send memorials promptly to Congress, in favor of a grant? It need only be brief. I enclose a form. Now if you would print it, call attention to it, and ask county societies and citizens to sign it and forward it to their respective Representatives or Senators in Congress, you would afford great aid. No time is to be lost.

"I remain, with great respect,

Yours &c., &c.,

JOS. R. WILLIAMS, President,
Michigan State Agricultural College."

The *Southern Farmer*, Va., and the *Scientific Artisan*, Cincinnati, Ohio, speaking of the agricultural college bill, remark:

"The Hon. J. R. Williams, President of the Agricultural College of Michigan which is now in successful operation, is an able and zealous advocate in the cause of agricultural education, and no man has done more, or as much, to promote the passage of the law.

"Not a few Senators and Representatives in Washington, last winter, voted for the Agricultural College Bill, because of instructions received from their constituents, who were aroused to the necessity of doing so, by the efforts of President Williams—The elaborate speech of Mr. Morrill, in Congress, winter before last, was prepared principally from information derived from him, and a large portion of the support which that bill received, was rallied by his efforts. Even the Bill, itself, was matured and revised at his suggestions."

President Williams suffered from asthma nearly all his life. His whole life was a struggle against poor health compelling him to give up one pursuit after another. He engaged in no business after leaving the college. He died at Toledo, June 15, 1861, when about fifty-three years of age. Not only his earnest preliminary work but his service for two years as president of the college establishes the reputation of President Williams as a remarkable man. At this point, the reader may well read his brief biography on another page.

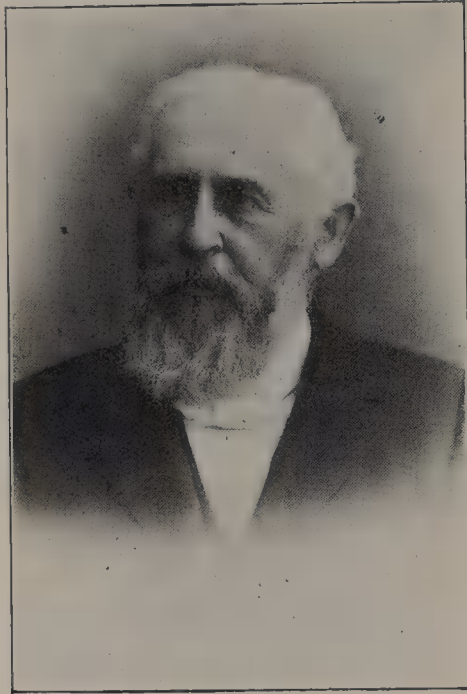
Elsewhere in this volume, several references are made to Michigan Agricultural College as early in the field of progress. Although chemistry is often spoken of as an old science, not until 1858 did chemistry at Harvard occupy a respectable place on the first floor of a fine building. The same year witnessed the first class in analytical chemistry at the University of Michigan. Professor L. B. Fisk, of the Michigan Agricultural College antedated both Harvard and the University of Michigan by one year in teaching chemistry as a part of a regular course of study. Upon the resignation of President Williams, Professor Fisk was chosen to direct the affairs of the college. The story of his administration is told in Chapter III.

CHAPTER III.

ACTING PRESIDENT FISK'S ADMINISTRATION.

1859—1862.

In the year 1859 the College was at a low ebb. In the spring the Honorable J. R. Williams resigned the presidency. The appropriation made by the legislature for the support of the College having to be paid from taxes which would not be received till February or March of 1860, the Board found themselves compelled to reduce the expenditures to the lowest amount consistent



LOUIS RANSOM FISK.

with meeting the merest current expenses, and the pressing indebtedness. For this reason, among others, the presidency was left vacant; and while Professor L. R. Fisk was elected by the faculty as president *pro tempore* of that body, R. F. Johnstone, Esq., the editor of the Michigan Farmer, was employed to take charge of the farm operations for the year. No improvements were undertaken but such as might be carried on with the students' labor on the farm, and the erection of some temporary structures for immediate necessities. The Board steadily bent their efforts to the extinguishment of the debt and the introduction of the closest economy into all the affairs of the College.

Near the close of the college year the Board of Education resolved to remodel somewhat the organization and courses of instruction.

"The changes contemplated," said the Honorable John M. Gregory (later president of the University of Illinois) in his report for 1859, as Superintendent of Public Instruction, "are such as will make the Institution more purely a professional school, so that it shall be sought not by those who merely wish a general education, but by those who desire to fit themselves for practical and scientific agriculturists. It was considered that the institution was designed not merely for farmers' sons, but for all who wished to become good and intelligent farmers."

The departments of instruction, under this new plan, were organized as follows:

1. The Department of Agricultural Chemistry.
2. The Department of Botany and Vegetable Physiology.
3. The Department of Zoology and Animal Physiology.
4. The Department of Civil and Rural Engineering.
5. The Department of Theory and Practice of Agriculture.

The Department of Agriculture was placed under the charge of the president of the College, who was given the general management of both the farm and school. This department was expected to exhibit the practical application of the principles and truths taught by the other departments.

"Like the medical student," said Superintendent Gregory in his report, "the young agriculturist will have learned from the proper professors all the facts and principles involved in his practice, and like the medical student he needs only the 'clinical course'—the actual application in the field and garden—to perfect him for his work. It is this part especially that the president, with his assistant, in practical departments, will give.

"To aid the president in the practical work and instruction of the College there will be a foreman or superintendent of the farm, and a foreman or superintendent of horticulture. In future years these officers may be supplied from the graduates of the College.

"The time to be occupied in the course is fixed at two years. On consultation with the most distinguished and intelligent Agriculturists in our own and Eastern States, it is concluded that while a longer period might be profitably spent in the study of agricultural science and the practice of agricultural arts, just as the student of medicine might profitably spend a much longer time than he is now required to do, in studying medical science and in hospital practice, yet the student may in two years acquire such a knowledge of agriculture as to undertake successfully the management of a farm; and that two years is as much as students will in general consent, in this country, to spend in mere professional training. It is to be remembered that the student's education is not in this, any more than in medicine or law, to end with the course of study in the school."

In making its report for 1859 the Board of Education recommended that the College be placed under a special board of trustees, a State Board of Agriculture, chosen more especially from the agriculturists of the state, thus enlisting more fully the sympathy of the agricultural population. This suggestion was afterwards adopted. In concluding, the Board said:

"The success of this Institution is of vast importance to the State, and to the agriculture of the whole country. Its triumph will introduce a new era of agriculture, and give civilization itself a new and grander impulse."

Professor Fisk, in assuming the duties of the presidency, understood well

the difficulties which the College was facing. He gives an interesting picture of the problems which the new form of education had to meet in these early years, in his report for 1859.

"The novelty of Agricultural Colleges renders it almost certain that the Michigan Agricultural College should be for some time in a transition state.

"Certain great questions of education now divide the public mind even within the walls of our long-established institutions of learning.

"In the development of this Institution, peculiar obstacles have impeded our progress.

"The location was an unfortunate one. The College needed, at its very opening, an improved farm. It needed such a farm in order to commence immediately a system of experiments.

"It needed an improved farm, that the income from the same should at least equal the cost of tillage.

"It needed an improved farm, to furnish the means, by direct illustrations, of making our agricultural instruction practical.

"It needed an improved farm more especially at first, while so many prejudices were cherished against it, and so many suspicions of its inutility were entertained, that it might have a fair chance of trial before the people of the State.

"It needed an improved farm that the great bulk of work should not be repulsive to the students, and hence produce discontent and alienation.

"The Agricultural College has been unfortunate in finding itself in possession of buildings which, because of fraud on the part of those who had contracted to erect the same, are very imperfect, and which have rendered a large outlay of means, for repairs, indispensable.

"Thus it will be seen that we have had much cause for discouragement. In the term which is now drawing to a close, we think we see many evidences of advancement.

"Considering all the circumstances amid which we have labored during the summer, the degree of success which the Institution has met, cannot fail to be gratifying to its friends.

"In addition to all of this, there was no one invested with permanent responsibility as an Executive officer, and the system of the College was in a transition state.

"There are at present 213 acres of the College farm under improvement, but of course not thoroughly subdued. Twenty-eight acres more have been chopped and burned over, and are now ready to be logged.

"I cannot forbear to make honorable mention of the very valuable services in the Horticultural Department, of Mr. A. N. Prentiss, a member of the present Sophomore class.

"The furnaces placed in the basement of the College building perform their office very poorly; also, from their imperfection, they are very insecure. I ask your attention to them.

"The boarding-house is hardly in a tenantable condition. The roof should be immediately repaired, provided a new roof be not substituted for the old one.

"There seems to be as yet some apprehension in the minds of many in regard to the present real character of the Institution, and the direction which its officers seek to give to its affairs, together with a difference of opinion as to the course which should be pursued in the future. This whole subject demands a very careful consideration. The objects of the College,

and the best means of securing the results sought for, should, I think, be earnestly discussed, and in the main determined as soon as possible.

"There can be no doubt that the College should be made more agricultural than it has been. It was created to be in the especial interest of agriculture.

"Now I am convinced that this Institution should be built upon an agricultural basis; that agriculture should run all through and through it; that no department of practical farming should be left unexplained; that the very spirit of the Institution should be agricultural.

"The faculty have been anxious that the professional element should be brought out more fully than it has been; that this should become a *School of Agriculture*. They are anxious that every facility that can possibly be afforded should be, to advance the agricultural interests of our State.

"I would recommend that, in order to make the Institution more professional than it has been, measures be adopted immediately to fill the chair of Horticulture, the chair of Civil Engineering, and that some instruction be given in the Veterinary Art.

"I have an abiding faith in the ultimate success of the Institution, if the proper measures are adopted for its complete and harmonious development."

The following excerpts are taken from the report of the members of the State Board of Education, J. R. Kellogg, chairman, for the year 1860.

"We have now, or shall have, before we have finished discussing the question, 800,000 people in the State of Michigan. Taking the census of 1850 as a criterion, sixteen per cent of any large community are between the ages of 16 and 22. Michigan has therefor 128,000 between those ages. One half of this number may be females. Of the 64,000 males not 1,000 enjoy the advantages of education beyond the common schools.

"The Institution continues to attract intense interest in other states. It should be the subject of honorable pride in Michigan, that her example in taking the lead in a great movement, indicative of educational progress, is so generally applauded, and in fact imitated. The organic act of her Institution is almost literally copied by the Legislatures of our youngest sisters, Iowa and Minnesota. The question of establishing similar colleges is agitated alike in Alabama and South Carolina, in Wisconsin and Massachusetts. In their due time, a new order of Institutions has been created. It remains for Michigan to retain the lead in this natural and inevitable movement, or abandon it."

The salaries at the Agricultural College at this period were:

President, \$1,500.00; Professors \$1,000 each. At the University, President, \$2,500.00, and house; Professors \$1,500.00.

Fifteen rules for conduct of students were printed in 1858, of which the following are samples:

"They are required promptly to attend all Chapel exercises, recitations, lectures, and field operations, and to discharge every duty imposed upon them.

"The use of tobacco and other narcotics, being disapproved of under all circumstances, is forbidden in any of the College buildings.

"Card playing, and other games of chance, are wholly prohibited.

"No student will be permitted to interrupt or interfere with the labor of fellow students and other persons employed on the premises, or to visit them while at their labor.

"On Sabbath, students shall attend the public Religious Services, held

at the College; and during hours not necessarily otherwise occupied, shall remain quietly in their rooms, and engage in nothing inconsistent with the proper observance of the day."

The Board of Education says further in its report for 1860:

"The year closing the 30th day of November 1860, was in several respects the most prosperous in the history of the Institution. The whole number of students has been somewhat less than in previous years, but the number of proper agricultural students has been greater. The students in attendance the past year have numbered fifty, mostly in the preparatory year. The course of professional instruction embraces two years.

"The Board have steadily looked forward to making the Agricultural College finally, to a considerable extent, a self-sustaining institution. They have believed that the people of the State would ultimately demand this. But to accomplish so desirable a result it will be necessary to add very considerably to the cultivated land on the farm. At least one hundred acres should be cleared within the next two years, and experience has amply demonstrated that it is poor economy to do this by the labor of students. An appropriation to this object will be more than repaid by the crops yielded the first year. The farm will soon pay for all expenditures made on its account. When its full extent of tillable land is brought under cultivation, it will afford a large income to sustain other departments of the Institution.

"Our State University, now so magnificent in growth, was not a success from the outset. Years of trial, and almost of entire defeat, passed before rising above the region of party and sectarian strifes and personal ambitions, it breathes free in the purer atmosphere of true learning and universal education. So let us hope that this younger child of our State System of Schools shall yet escape from the dangers that surround its infancy, and come at length to realize the full and beneficent idea of the far-seeing men who incorporated it in our State Constitution."

The legislature in 1861 authorized the Board to confer degrees.*

Agricola in *The Advertiser and Tribune*, Detroit, February 10, 1862, wrote:

"The College was instituted, not in compliance with the demands of our farmers, as a body, but because, in the judgment of thinking men of all classes, the ignorance and apathy of the industrial, and especially of the agricultural classes, stood greatly in the way of that rapid development of our industrial resources which constitutes the true source of our wealth as a State. We trust no one will question the sufficiency of this object, as a motive for the initiation of the undertaking, and it appears to us to be equally conclusive as a reason for its continuance."

Francis Hodgeman '62, writes thus of his course:

"I graduated at the College in the fall of 1862, was, and am, intimately acquainted with all the graduates of the first four classes and, to a large degree, with many of the later graduates. I have frequently conversed with them in regard to the College, its benefits, its needs and its shortcomings, and never heard from any of them expressions other than those of the most hearty good-will, and earnest wishes for its continuance and prosperity where it now is. Last November I attended a meeting of the alumni and heard nothing different there. When I entered the College I was a lad of eighteen, dependent entirely on my own resources, and had nothing in the world to start with but the wages I had earned teaching the previous winter. I worked my way through, paid as I went, and left College pecun-

*See appendix for a copy of the law establishing a State Board of Agriculture.

ially poorer than I entered it. I left the College with a strong and healthy body, thanks to the manual labor, which I never found occasion to shirk, as some did, and will do to their disadvantage. I left it with a firm faith in the truth of the principles on which it is founded, and faith in its final success. I left it with a heart full of honor for the dignity of the farmers' vocation, and full of wishes that every farmer would soon cease to be a mere digger in the earth, and rise to the full knowledge and dignity of his calling. I did not myself become a farmer, and why? Simply because I was too poor to buy even a small farm, was without position or influence, and thought that I could do better than to hire out as a day or month laborer on a farm. I know other graduates of the College similarly situated, and I earnestly beg the fault-finders to stop using us as an argument against the College. It gave us opportunities that no other institution would or could give us. It taught us to think and to work and to love both."

Honorable F. W. Redfern gives an interesting account of difficulties he encountered in 1862 in getting to the College:

"Six years after the College had been started, I left my home in Marshall to become a student in the College, going by rail to Jackson, then took a stage for Lansing—four passengers and a road consisting of a series of mud holes. The three men had to get out several times to help pry the wheels up before the poor tired horses could go on, and going up the hills we walked. We reached Lansing at 6:30 in the evening. The best I could do was to hire a horse to ride to the College in a very dark night. Two miles out the road was overflowed and the flood had carried away the planks of a sluiceway. After getting off the horse I induced him to walk across one of the widest stringers; I found the President, who examined and enrolled me as a student, I returned to Lansing about midnight, the next day going on foot to the College and began study. In a week, I left College with diphtheria, got well and enlisted in the army never to return as a student. I had a son, S. J. R., who graduated in 1897."

In 1861 the faculty consisted of:

Lewis R. Fisk, A. M., Professor of Agricultural Chemistry; T. C. Abbot, A. M., Professor of History and English Literature; George Thurber, M. D., Professor of Botany and Horticulture; Manly Miles, M. D., Professor of Zoology and Animal Physiology; James Bayley, Superintendent of the Farm; J. G. Ramsdell, Instructor in Book-keeping.

The students all told numbered sixty-six, including twenty-nine in the preparatory department, and this was the fourth year of the College.

The farm by this time had proven to be not only an important but an indispensable element in the educational facilities of an agricultural college. It had become a means of illustrating, in the most satisfactory manner, the principles of science taught in the lecture room and of giving the student a practical knowledge of their applications.

The Library at that time contained about twelve hundred volumes.

During the year 1862, T. C. Abbot was acting Secretary of the State Board of Agriculture in addition to his other duties. He states: "At the first meeting of the Board they elected Governor Austin Blair President of the Board." He was also the President *pro tempore* of the Agricultural College, until the appointment of Mr. Abbot. Professor Abbot attended to the receipts and disbursements of the College, the keeping of the Board and faculty records, the labor account of students, and the general correspondence of the Board.

"The Board were able, by rigid economy, to find means to put a new roof

upon the brick barn, at an expense of \$300; to build a bridge across Cedar river, at a cost of \$750, and to erect and finish a barn for hay, grain, and stabling cattle, at a cost not much exceeding \$1,500.

"The College has been prosperous in the main. Diphtheria brought mourning and a short vacation during the last summer. Eleven of the students present at the beginning of the term, and very many of those in attendance last year, are in the national army. But there has been quite a large and an increasing number of students, as the catalogues will show, who speak in terms of enthusiasm of the nature of the studies they pursue, and the most of whom intend to follow farming on the termination of their course of study.

"In the midst of a rebellion, which largely engrosses the interest of every loyal citizen, the legislature of this state has been too wise to overlook the education of her youth."



Professor L. R. Fisk, chairman, and T. C. Abbot, secretary, one or both, made the unsigned faculty report for 1862 and make the best showing possible considering all the many discouragements. They seek to have the museum enlarged, and urge the beginning of a museum of farm implements. (In 1913 not yet in existence): They speak of the starting of a fruit garden. The decimated relics of a fruit garden were in existence when the writer began work in 1870 and two or three trees still remained in 1911. About four rods northwest of the greenhouse is still to be seen a crab-apple and possibly another apple tree. Directly south from these was a double row of trees extending some four rods, and to the north about the same distance where possibly still remain some sprouts from the stump of another crab-apple; from which extended east six or eight rods a double row of dwarf trees of apple, pear, cherry and other fruits. The light sand was unfavorable for the growth of this garden.

When the garden was started there had been about 250 acres put into crops. No effort was made to grow the largest possible crops. No attention had been given to raising thoroughbred stock; the main part of the old cattle barn, 42x64 feet, was built in 1862 on the spot now (1913) covered by the north end of the stately Agricultural Building. Fisk and Abbot suggested starting experiments to be duplicated by intelligent men in various parts of the state; they speak, in their reports, of draining the big marsh at the north into the Looking Glass river to make good meadows (not yet well done in 1913); the national land grant is referred to.

Does the Institution pay? The farm superintendent, J. S. Tibbits, replies: "Yes, but not in the sense in which the question is usually asked."

"It pays in the advantage derived from the educational, horticultural, and agricultural departments of the institution. It pays in the same way that our public schools, academies, and universities pay."

Dr. George Thurber speaks for horticulture: "The institution should possess a specimen orchard including all the standard varieties of apples, pears and other fruits; it should grow grapes under glass." He holds that the ornamental division is useful and profitable; whatever the students find attractive and beautiful here will be adopted by them when they have homes of their own. A student, A. N. Prentiss, was selected to act as foreman, and made a fine start from the beginning.

Professor Fisk, acting president under trying circumstances, could not be reasonably expected to inaugurate new schemes. Perhaps the College held its own and took a few short steps forward during the time when Professor Fisk was acting president. The national land-grant gave encouragement. The catalogue for 1862, as do all succeeding catalogues, stated that the College occupied a pleasant and healthful location, though at that time fever and ague still lurked around the neighborhood. Who ever knew a college advertising itself as in anything but a healthful climate?

The class that should have graduated at the expiration of the first four years of the life of the institution (in 1860) was dispersed at the re-organization of the College under the Board of Education, or this College would have been nearly a year in advance of any other agricultural college in the land, in bestowing the honors of graduation. In 1861 a class was graduated, and another in 1862. There were no public exercises of the graduating class in 1861, as every member of the class but one entered the army of the United States a short time previous to the close of the term.

After serving as chairman of the faculty for nearly four years, Professor Fisk and others presumed that the board would elect him president, but to the surprise of Professor Abbot and many others, T. C. Abbot was elected President of the College in December, 1862.

The above I had direct from Dr. Miles in 1870.

Terms and Vacations.

The college term opened on the last Wednesday of February, and continued until the last Wednesday of November, of each year. The examinations and other exercises of the College were so arranged as to allow students who desired to teach for four months during the winter the privilege of being absent the first and last two weeks of the term.

Routine of Duties.

The time of the students was divided between labor, study and recitations. They were arranged in two work divisions, one section laboring in the fore-

noon, the other in the afternoon. If, then, they were not laboring on the farm or in the garden, in conformity with the regulations of the College, they were employed either at their studies, or in recitation.

JUSTIN SMITH MORRILL

Was born in Strafford, Vt., April 14, 1810, the eldest of ten children. His father, his grandfather, and one of his brothers were blacksmiths. The family came to Vermont in 1798, from Chichester, N. H. The education obtained in the district school was supplemented by a term or two at Thetford Academy, taken in his fourteenth year. Two years as clerk in a country store, and four years in a like position in Portland, Me., constituted his advanced course. Then he was a merchant in Strafford, in partnership with Judge Harris, for fifteen years, at the expiration of which time both



U. S. Senator Justin Smith Morrill, born in Vermont. Author of the land grant bill in 1862 appropriating means to establish colleges in states and territories.

partners were satisfied to retire from business. The next seven years he spent in farming a piece of land that he bought upon leaving trade, keeping up, also, his lifelong practice of spending his leisure hours with good books. He took his seat in the house, December 4, 1855, and received the united support of his party in five successive re-elections.

As early as the thirty-sixth Congress, Mr. Morrill secured the passage in both houses of a land-grant college Act. Though vetoed by President Buchanan, it was re-introduced in 1862 and, by Mr. Morrill's skilful handling, was again carried through the two houses and received the signature of President Lincoln. This made possible the founding, in the different states and territories, before his death, of sixty-four colleges specially devoted to such branches of learning as are related to agriculture and the mechanic arts, without excluding other scientific and classical studies. His own limited schooling seems to have suggested this grand purpose to put the opportunity to pursue advanced studies within the reach of greater numbers,

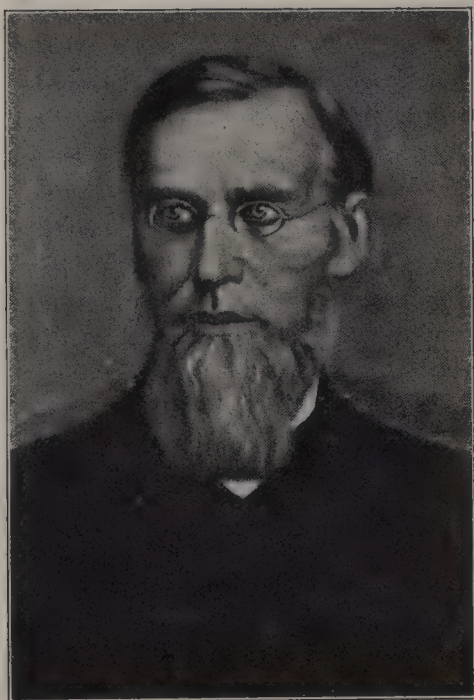
and, at the same time, to secure a more general application of the physical sciences to agriculture and other industrial pursuits. Mr. Morrill was the author, also, of the bill approved August 30, 1890, for the more complete endowment of these colleges. His term of continuous service in the national legislature exceeded that of all his contemporaries. The land-grant colleges are witnesses to his sagacious forecast and practical spirit. The health and vigor of his later years testify to the simplicity and temperance which characterized his entire life. During his long career as legislator there was no hint of charges of corruption or incapacity. (2)

CHAPTER IV.

PRESIDENT ABBOT'S ADMINISTRATION.

December 1862—November 1884.

In December, 1862, T. C. Abbot was elected President of the College and began a service of 22 years, the most important period, in a formative sense, in the history of the institution. Although equipped with a classical training,



THEOPHILUS CAPEN ABBOT.

he had been so long connected with the institution and had studied so faithfully the ideas of President Williams, whose warm friend he was, that he had formed a clear conception of what the College should become. In the next year, 1863, when T. C. Abbot's name first appears as president, the catalogue contains a statement of purposes, which shows clearly what President Abbot's ideas were. It appeared for twenty years in each successive catalogue, the last time in 1882, while Dr. Abbot was still president, and it was made the basis of most of the acts and policies of his long administration. This statement is well worth considering for its influence upon the development of the College. It follows here:

"The State Agricultural College proposes:

"1st. To impart a knowledge of Science and its application to the arts of life. Especially are those Sciences which relate to agriculture and kindred

arts, such as Chemistry, Botany, Zoölogy, and Animal Physiology, prosecuted to a much greater extent than in institutions where the study of their practical applications is not pursued. The instruction given in the Lecture room is illustrated and enforced by the actual and prolonged study of plants and animals, and of the various practices and experiments of the farm and garden. Students will be taught to distinguish clearly between those principles and settled rules of agriculture, in accordance with which they may safely proceed, and those theories or practices which are either exploded, or are as yet the proper objects of experiment and discussion only, but whose too hasty adoption has led to repeated failures, and to the discredit of Science.

"2d. To afford to its students the privilege of daily manual labor. As this labor is to some degree remunerated, it might seem intended only to



Barn and sheds, Horticultural Department.

lessen the expenses of the student. Its first use, however, is educational, being planned and varied for the illustration of the principles of Science. The preservation of health, and of a taste for the pursuit of agriculture, are two other important objects. It is well known that students who pursue a college course very seldom thereafter engage in any industrial pursuit. Four or six years of study without labor, wholly removed from sympathy with the laboring world, at that period of life when habits and tastes are rapidly formed, will almost inevitably produce a disinclination, if not inability, to perform the work and duties of the farm. But to accomplish the objects of the institution, it is evident that its students must not, in acquiring a scientific education, lose either the ability or the disposition to labor on a farm. If the farmer then is to be educated, he must be educated on the

farm itself; and it is due to this large class of our population that facilities for improvement, second to none other in the State, be afforded them.

"It is believed that the three hours' work which every student is required to perform on the farm or in the garden, besides serving to render him familiar with the use of implements and the principles of agriculture, is sufficient also to preserve habits of manual labor, and to foster a taste for agricultural pursuits. It has been found in the past sufficient to keep the students interested in every department of farm and horticultural work; and the daily labor of each one being performed at one time, does not occupy him longer than is requisite for preserving health and a robust constitution.

"3d. To prosecute experiments for the promotion of agriculture. Agriculture is the creature of experiments. Very few farmers possess facilities for carrying on experiments accurately, and to definite results. From a lack of general acquaintance with the laws of Nature, their experiments generally, unless guided by scientific men, are comparatively valueless for the determination of vexed questions of practice, and the establishment of general principles. An extensive Laboratory, and other means at hand, enable the institution to enter on a series of experiments, to be prosecuted systematically and continuously from year to year. As the students themselves, at a proper stage of advancement, participate in conducting these experiments, they will go forth from the institution qualified to make and record observations for the use of Science.

"4th. The organic law of the College, as well as the act of Congress donating lands for agricultural colleges, contemplate courses of instruction in the military art, and in the applications of Science to the various arts of life. Instruction to a limited extent, is already given in military field operations, hygiene, etc. Aside from this, the practical applications of Science are at present pursued mostly in directions desirable to the farmer—as surveying, leveling, laying out of grounds, mechanics, as applied to implements, buildings, stock-breeding, etc.

"5th. To afford the means of a general education to the farming class. This the Agricultural College endeavors to supply. The labor system preserves the student's health, and the habits and love of wholesome work. The professional part of the course gives him an insight into the nature of the objects and forces with which he has to deal. Added to this are the branches of study which help to make an intelligent and useful citizen, which cultivate his taste, and enable him to give expression to his knowledge and opinions."

In order to show how Dr. Abbot's ideas were worked out in practice, the course of study at the College as it was in 1863 is here given. No electives were allowed.

Course of study in 1863.

PREPARATORY CLASS.

First Half-Year.—Arithmetic, Descriptive Geography, English Grammar.

Second Half-Year.—Algebra, Natural Philosophy, Composition.

COLLEGE COURSE.—FRESHMAN CLASS.

First Half-Year.—Algebra, Geology, Geometry, Book-keeping.

Second Half-Year.—Trigonometry, Surveying, Entomology, Principles of Stock-breeding, History.

SOPHOMORE CLASS.

First Half-Year.—Physics, Structural Botany and Vegetable Physiology, Elementary Chemistry.

Second Half-Year.—Physics, Analytical Chemistry, Systematic Botany, Horticulture.



Sheep barn, built by Dr. Miles, enlarged in 1906.

JUNIOR CLASS.

First Half-Year.—English Literature, Agricultural Chemistry, Animal Physiology.

Second Half-Year.—Industrial Drawing, Landscape Gardening, Rhetoric, Zoology.

SENIOR CLASS.

First Half-Year.—Inductive Logic, Mental Philosophy, Civil Engineering.
 Second Half-Year.—Astronomy, Moral Philosophy, Political Economy.

“Declamations every six weeks during the course. Composition every two weeks. Drill in Infantry Tactics twice each week. A lecture is given in the Chapel each Tuesday afternoon, as follows:

On Horticulture, the first Tuesday of each month.

On Applications of Chemistry to the Arts, 2nd Tuesday.

On Manual Operations on the Farm, 3d Tuesday.

On Care and Feeding of Domestic Animals, Health, and on various topics, 4th and 5th Tuesdays.

On Military Hygiene, the 1st Friday.

On Military Fortifications and field operations, the 3d Friday.”

At that time (1863) the professors and officers of the College were few in number compared with what they are to-day. A list follows:

T. C. Abbot, A. M., President, Professor of History and English Literature.

Manly Miles, M. D., Professor of Zoölogy and Animal Physiology.

C. A. Kenaston, A. B., Instructor of the Preparatory Class, and Secretary.

R. C. Kedzie, A. M., M. D., Professor of Chemistry.

Albert N. Prentiss, B. S., Instructor in Botany and Horticulture and Superintendent of the Gardens.

Oscar Clute, B. S., Instructor in Pure and Applied Mathematics.

Hon. Langford G. Berry, of Detroit, Treasurer.

At that time, while the academic and scientific instruction were of a high order, there was no professor of agriculture. The faculty agreed that such a professor was needed, “but a man of such attainments was at that time not to be hoped for. The principles that underlie the practice are not yet ascertained.” (9)

The writer has often heard President Abbot refer to these early years of his administration as the darkest days in the history of the College. It was a trying time in the country, then in the midst of a civil war, and appropriations were hard to get and students were few. In 1863 there were but 60 students, running down to 48 in attendance. The faculty was small and poorly paid. The salaries were:

The President	\$1500
Professor of Chemistry	\$1000
Professor of Zoölogy	\$1000
Professor of Mathematics	\$600

From President Abbot's first report (1863) the following is summarized:

“The present term opened under singular embarrassments. It was well known that the Institution depended on legislative appropriation for current expenses, yet no such appropriation was made until three weeks after the commencement of the spring term. Meanwhile the Detroit daily papers, and many others gave the public the impression that no provisions would be made for the expenses of the College. Students now in actual attendance were making arrangements to go elsewhere and finish a course commenced here, under a very prevalent impression that the College would be closed. Invariably all applicants for admission, by letter or otherwise, were informed of the existing uncertainties. Gradually, however, many of the former students returned, and others entered, until our numbers were fifty-one, not including a few others who were in College a short time on conditions.” (9)

All this goes to show how long it takes for a great idea to find a secure root-hold and grow. The germinal idea of the agricultural college was very old. I quote from an interesting report made years later by Prof. L. P. Breckenridge:

"This new system of education was presented to the world by that good Moravian Bishop Comenius more than 200 years ago.

"Here are some of his words:

"(1) 'Let everything be communicated through the senses and turned to present use.'



Piggery built by Dr. Miles, twice moved.

"(2) 'Let nothing be prescribed as a memory task that has not previously been thoroughly understood.'

"(3) 'Leave nothing until it has been impressed by means of the eye, the ear, the tongue, the hand.'

"(4) 'Let nothing be learned by authority, but by demonstration sensible or rational.'

"(5) 'Above all never teach words without things.'

"(6) 'The senses are the most faithful standards of memory.'

"(7) 'Mechanics and artists do not teach their apprentices by disquisitions, but by giving them something to do.'

"(8) 'The study of languages should run parallel with the study of things, especially in youth, for we desire to form men, not parrots.'

"(9) 'As human nature rejoices in doing, everything should be learned

by practice, and the utility and bearing of what is learned should be made manifest.'

"(10) 'We do not speak to our pupils, but the *things themselves*, and everything should be taught by the things themselves, or, when these fail, by accurate representations of them.'"

A few schools were just ready to follow his precepts after an interval of over 240 years.

In spite of many discouragements, President Abbot, however, revealed his qualities of unfaltering hope and good humor, and his report tells of steady improvements in fence and road-building, clearing and log-burning, draining of wet lands and the planting of an orchard. All the departments were busy with new work of various kinds, laying the foundations for the activities of



Dwelling of the foreman of the farm, formerly the farm house.

future years. Dr. Kedzie began making meteorological records, among the first in the country, and these have been kept continuously to this writing (1911.) Dr. Miles visited the eastern herds of Short-Horns and Devons and began to supply the College with fine animals as models for farmers, and strong efforts were made to illustrate in the farm work scientific principles of culture, rotation of crops, etc., and to employ the latest machinery. In this year also the Cooley herbarium was presented to the College, and Professor Prentiss maintained a model garden for vegetables and small fruits.

In the second annual report (1863) of the Secretary of the State Board of Agriculture appear five and a half pages devoted to a minute plan for conducting the farm and garden with relation to the instruction. Though bearing no signature, I am sure, knowing his habits, that President Abbot prepared it. It provided for extensive mapping of the ground and laid down 24 rules, with numerous sub-rules, providing for the most minute and systematic reports of every operation, and the relation of lectures in the classrooms to the work outside. I need not quote these rules, for most of them would now be considered worthless lumber. They were fine-spun and most



Rustic wagon bridge across the ravine west of the chemical laboratory.

of them impracticable, as the writer knows from a long experience in teaching students in the orchard, garden and about the campus. When a student runs a lawn mower by hand or horse, or rakes leaves in autumn, or picks up rubbish about the halls, or runs the swill barrel to the pig pen, or splits some wood, or digs narrow-leaved dock, the more he knows of the art of labor the better, but he is not going to get much application of science out of such jobs. The class-room instruction rarely fits a class just in the nick of time to be practiced in the field or garden. A foreman with little skill and experience is sure to give some bungling instructions, which will be discovered by some student. President Abbot was a wonderful scholar, but he possessed very little manual skill, which made it impossible for him to give good rules for others to follow with profit.

To add to all of its other difficulties in those days the College was under a constant fire of criticism. There were still those who urged that it be merged with the University, but the State Agricultural Society continued supporting it vigorously. From scrap-books in the college library the writer gleans these examples of the newspaper, and other criticism:

"The College is a failure and a disappointment, the location should be changed; let the farm go and begin new in an older region; join it to the University and use the buildings for a reformatory school."

Governor Moses Wisner about 1860 said: "The time will come when the Agricultural College will be the pride and boast of our State."

"For a farm the rolling surface of Washtenaw presents greater advantages than any other region of the State."

"The College only needs a small farm of 40—60 acres for experiments."

"It costs too much; it has few students; it is not turning out farmers." That the College would be criticised was prophesied by President Williams in his inaugural.

"The same faculty, the same farm and garden and collections can as well give instruction and practice to 300 students as to 82." [A fallacy. W. J. B.]

"That heavy humbug, the Agricultural College." Free Press, 1869.

The outgoing Governor Crapo and incoming Governor Baldwin in '69 recommended some support.

"Does the labor of students pay? Pay how? or what? This is a college."

"Make your student a master farmer, or master mechanic; but make him also a master man." Andrew D. White, President of Cornell.

In the *Junior Annual* of the Class of 1901, Dr. Kedzie tells a story which illustrates the difficulties which the College had to face during the hard years of the war:

"When I came to the College in 1863, the faculty consisted of the President, two Professors, and three Instructors—a membership of six, somewhat in contrast with the 45 (149 in 1913, not including 14 members of the staff of the Experiment Station) that now make up the faculty and sub-faculty of today. The halcyon days of the College soon passed away. Dr. Miles remarked to me, 'Before you came we never had a divided vote in the faculty; it was always unanimous.' The word was spoken in reproof, but accepted as a sly compliment.

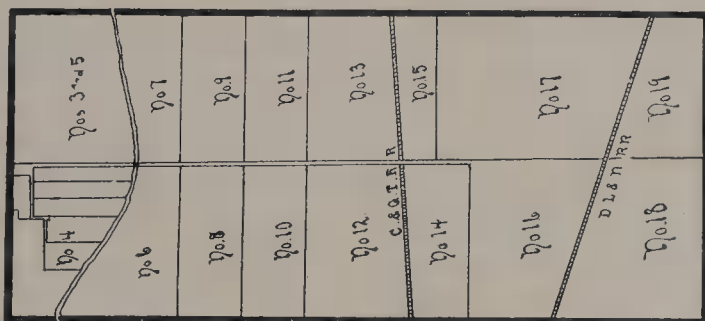
"The faculty meetings during the school year were held at seven p. m. Monday, when matters of great interest to the College were earnestly discussed and plans matured. One subject frequently before us was how to secure more students and fill up our skeleton classes to the full quota.

"In our faculty meeting the appalling information was given that D—and G—were going home for the reason that their red flannel shirts had

been stolen from the clothes line and they had no money to buy garments to replace them. 'Lose two good students for the price of a pair of shirts? Never!' A contribution on the spot raised the sum necessary, the shirts were bought and presented—as gorgeously red as if they represented the life-blood of the College.”

It will be interesting, also, to see how the College looked to the students of those days. The writer quotes from an address given by the Hon. S. M. Millard, class of '64, at the third annual reunion of the Chicago M. A. C. Association in 1898. Mr. Millard was for many years a successful lawyer in Chicago:

“Crude were our beginnings; rough and unkempt was the raw material from which to construct the temple of learning. Dark days were they in the '60's when class No. 2 enlisted in a body and went into the army. Dark days were they when for weeks all classes were in doubt whether the powers that were would wreck the College in the interest of other institutions of learning. Dark days were they when the epidemic of diphtheria spread through and thinned our ranks within a few days, by taking six of our fine fellows, and absolutely closing the doors of the College. We have many times wondered how our



Part of the farm, over a mile long, showing the fields and two railroads.

gallant band of determined men in classes two and three stood by the College, and fought out the days and years of trials and tribulations. Few men of latter years can understand the heroism of our pioneer students. And we are glad it is so. Like the old veterans of the Mexican war, the veterans of the M. A. C. saw no dress parades. They lived in their 'fatigue suits' and left the 'dress parade' to their successors. We never had a 'college yell' but we dug ditches and stumps three hours a day. Yet there dwell in the temples of memory, pleasant thoughts and sweet recollections of the men we knew as classmates, and whom we learned to love.”

In a letter to the M. A. C. Record, Mr. Millard gives the feeling he had of the breadth and meaning of the new sort of education.

“We do not worship any one man as the founder of our College—no John Harvard, no Hopkins, no Cornell—but in the beginning, an idea appeared; a broad-knowledge was demanded,—a knowledge which would reach out into all the walks of life, and elevate all pursuits and callings.

“Our alma mater was among the first colleges in the world to fully incorporate and crystallize the elements for a broad, practical education to men desiring to break away from the old curricula. The idea was at first crude in its earlier life. They did not fully realize that the study of chemistry, botany, zoölogy, geology, English literature might be as severely disciplinary as the dead languages.

"Since our College had its birth, every college in the land has modified its curriculum, and has grafted into its college requirements more or less of the sciences, mechanics, and the practical arts in life—until the older classical institutions have become rich in special courses. A college for a broad or practical education opened its doors, and our old boys walked in; little did we of the pioneer days dream of the present."

Dr. C. E. Bessey, who has since become a well-known botanist with long experience as a professor in agricultural colleges, was a student from 1863 to 1869 and gave at our semi-centennial his vivid impressions of the teaching quality and kind of teaching of those days:

"HOW THEY TAUGHT IN THE STUDIES.

"It was emphatically the period of the textbook. Some of the professors gave lectures, but in every subject the student always had his textbook as the basis of his study, and daily recitations were the rule. We learned things from books, and were asked to repeat them orally at greater or less length to our teachers. We were not asked to write out what we knew, but were required to stand up and tell it under the keen eye of the professor, and the brutally critical attention of the class. In this way we learned to think on our feet, and I have always felt that much has been lost by the general abandonment of the old-time recitation, and the substitution of the written quiz and examination.

"Chemistry, even at that early day, was taught by practical work in the laboratory. We had one lecture or recitation a day, and in addition two hours daily of laboratory work. In the lecture the professor accompanied his presentation of the subject by carefully planned demonstration experiments, greatly to our edification, and occasionally to our amusement. In the laboratory we plunged at once into the qualitative analysis of unknown substances. We learned to handle chemicals and apparatus by the very simple plan of actually handling them ourselves. Of course we broke apparatus, and blew up things rather often, but finally we learned to be careful, and no one was killed or seriously hurt in the process.

"In marked contrast to chemistry, was the presentation of physics, which was wholly a textbook study. We used Olmstead's Natural Philosophy, reciting and demonstrating (on the blackboard) from its pages, but neither making experiments ourselves nor seeing any made by the professor.

"Surveying was made a living subject for us by the addition to a stiff textbook, of a considerable amount of field-work, with compass, transit, and level, and the accurate plotting of results.

"Our geology was still a textbook subject only. There was no thought of the use of specimens of rocks or fossils by the class, nor was there any required field-work in connection with the subject. Yet there were in the museum on the third floor many such specimens. The idea of their use by the students had not yet taken hold of teachers in American colleges. The museum contained specimens to be looked at through the glass doors of the cases by the public and occasionally by the students, but such specimens were for preservation, not for handling."

"In zoölogy we used a textbook, but its required use was small, indeed. The professor (Dr. Miles) loved to talk to us, and he led us in his talks far deeper into the subject than did any textbook of that period.

"Even the subject of entomology was mainly a textbook study. We memorized so many pages and repeated them as nearly as possible verbatim.

Here we looked at specimens brought to the class. There was also some desultory collecting of specimens, and now and then a student was seen frantically pawing the air with a "bug-net," in his efforts to capture some beetle, bug, or butterfly.

"In my own science of botany the work was then mainly confined to daily recitations from a textbook, accompanied later by dissections and 'analyses' of plants in the classroom, under the direction of the professor. We had a few simple dissecting microscopes which we used in these exercises. Here was no doubt the germ of the laboratory idea as applied to botany. But the purpose was not so much to find out the structure of the plant as to find its name. When that was accomplished we stopped further study of the plant. The name was the important thing and when it was found there was nothing more to be done, unless perhaps to check it off on the margin of the manual.

"It was a primitive college, and the teaching of the sciences was primitive. We may smile now at the kind of instruction we received at the hands of the professors of that day (1864-65) but it must not be forgotten that science teaching was rather new in all colleges at that time. Sciences were not well taught in any of them. In many they were not taught at all. And it is the glory of our Alma Mater that she encouraged the study of these sciences. Forty years ago this was the only college in the west in which one could study all of the great sciences in any manner, or after any fashion at all. And it is greatly to her credit that, with the possible exception of Harvard University, this College then gave the most extended and thorough course in botany in this country.

"It was a pioneer in science teaching, and its primitive methods were due to the fact that nowhere were better methods known or practiced. Elsewhere they were generally still more primitive. The College stood then as now for the study of things, as shown especially in its teaching of agriculture, horticulture, and stock breeding. The College was instinctively, though unconsciously, moving toward the modern laboratory method. It led the way toward illustration and the direct study of things themselves, and gave a strong impulse in aid of the incoming of the laboratory idea.

"No alumnus of this College need be ashamed of the kind of work done in the early days, but rather should he be proud that his Alma Mater, though so young among the colleges of that time, was among the first to adopt modern methods of teaching and study."

The feeling that the College was engaged in the great pioneer task of establishing a new form of education, and that there was therefore constant necessity of defining its purposes and describing its work, was ever present with Dr. Abbot and other early leaders. In one of his reports (that of 1864) he expresses this thought in words:

"Persons in other states also who are interested in the work of establishing agricultural colleges under the late land-grants of Congress, are entitled to whatever results our experience may seem to us to have wrought out.

"As it is, in spite of the partial success of the college in Pennsylvania, and of our own, every question is under discussion in other States: the length of the course; the kind of studies; whether or not instruction shall be given wholly by lectures; whether labor shall be required of the students; whether the farm is to be mainly a model or an experimental one; and the relations in general of labor and study. The details of our plans are eagerly sought for by persons in other States, and, as a general thing, are approved by those who give them their attention. The Commissioner of Agriculture, at Washington, has examined and endorsed our general plan. The prevalent discussion of

agricultural education in the papers, occasioned by the late grants of Congress, has not as yet brought to our notice any detailed plans varying much from the system we are already working upon. Intelligent farmers and educationists who have visited the College, express themselves pleased with the plan, and what they see of its workings. We would be glad to prosecute the work with such vigor as to enable Michigan to maintain the first rank for the excellence, as it does for the priority, of its Agricultural College."

In order to present more vividly a picture of the College as it was in those early days I give here the memories of two old graduates, Daniel Strange of the class of '67 and Alfred G. Gulley of the class of '68.

Daniel Strange writes me:

"When I entered in '64, aside from the one dormitory there was but the one College Hall devoted to instruction. This, of course, housed the library, museum, chemical laboratory and all biological laboratories, if indeed any could be said to exist. The farm buildings were but the one large cattle barn, a very small brick horse barn and a pig sty. The teams were two worn out horse teams and two good ox teams. There were three shorthorn cows, two Devon cows, and a bull of each of these breeds. There were a few grade cattle and Suffolk and Essex swine, but I think no sheep until the following year.

"There were four small brick cottages for the president and professors. The above with the farm constituted the College's material equipment.

"The faculty, as you well know, consisted at that time of only President Abbot and Professors Kedzie and Miles. Professors Clute and Prentiss were then employed simply as instructors. Professor Fairchild came the next year as instructor of the preparatory department and Professor Cook came in '67 as instructor in mathematics. It has always been a matter of great wonder to me that so feeble a college should have been manned by such able and strong men. President Abbot was a man of marvelous scholastic attainments. America has known but very few who were in this respect his equal. Dr. Kedzie's praises have been sung so long, so loud, so repeatedly or so constantly that I need not add a word. If indeed he was, as is so often claimed, the backbone of the College for many years, then was President Abbot the brain and the heart, and Dr. Miles was the active limbs. Clute, Prentiss, Fairchild and Cook all achieved later a national reputation as eminent educators. Not one of these men had any practical knowledge of farming, excepting possibly Dr. Miles, and his knowledge was certainly very limited when he became Professor of Agriculture, but he was a man of eminently scientific trend of thought, a faithful student and an indefatigable worker. His early collegiate instruction had been quite limited, and however little or much he may have known of agriculture when appointed, he lived until those best qualified to know said that if there is any science of agriculture, Dr. Miles knows more of it than any other man living. (May I add parenthetically that in my opinion the future historian will write that the science of agriculture was not yet born when Dr. Miles died, but certain it is that he guarded and nurtured the embryo.)

"These, then, were the men upon whom was laid the heavy task not only to develop the first of agricultural colleges but to develop the science that she might teach; a task not unlike that of the pioneer farmers who had first to carve out their farms and then to develop them ere they could really become farmers. President Abbot had a marvelous, clear vision of the ultimate aim and object of the College. Professor Kedzie taught chemistry with a view to its application to soils and fertilizers; botany was taught with reference

to the field rather than to the forest; mathematics was taught with a view to its application to farm surveying and engineering, and Professor Cook became later a terror to all the bugs, if not to the bees as well. Michigan was filled with practical farmers with but slight appreciation of scientific research, and it is no wonder that to them the College became known for its hundred mistaken experiments before it was famed for one important advance in practical farming.

"If an ideal university is Mark Hopkins seated on one end of a log and a student upon the other end, here indeed was an ideal college, for it had not one man seated, but five earnest, enthusiastic teachers up and active and leading by the hand, so to speak, a score of seekers for scientific truth. We dwelt in a sacred nearness to our teachers that never can obtain in a larger institution. We were invited into their families and welcomed into their libraries or to private interviews at all times. Their personalities impressed us and were stamped upon us for all time."

Alfred G. Gulley, '68, gives these memories:

"The most convenient method to get to Lansing was to walk, hence the students did not visit the city very often. As a matter of fact there was no reason why we should go, as nearly all our needs were supplied by the steward or some department of the college.

"Our social duties were neither extensive nor expensive, consisting of an occasional reception by some of the faculty or possibly once a year a visit to the female seminary in North Lansing, then called "Lower Town." There was but one dancing party on the grounds during my college course, and not another until many years later. During the latter part of my time President and Mrs. Abbot held receptions on Saturday nights, which were much appreciated by the students.

"It was the duty of one student to walk to Lansing each afternoon and carry all mail going to and from the College. For nearly half my course this position was filled by a one-armed veteran of the civil war.

"Athletics as such did not exist. Soon after my time, ball clubs were started in nearly all colleges and towns. They were not known as teams. The game became popular at once at the College when introduced in 1865. The first club at the College went under the name of The Stars. Curved balls were not yet discovered. No attention was paid to any other sport, though an attempt to introduce cricket in 1866 proved a failure.

"We had both class and college debating societies that flourished more or less.

"The labor system was a very important part of the institution. We worked regularly three hours each week-day. All the early spring was devoted to cutting wood used on the grounds, where buildings and rooms were heated by wood stoves. During the growing season about all of the work on farm and garden, except teaming, was done by students.

"In the winter vacations a large number of the students taught district school, to earn money to help on college expenses, and often at the same time, acted as solicitors for more students from among their pupils.

"The small number of teachers and students, coupled with dormitory life, enabled all to become intimately acquainted and resulted in many life-long friendships that have been of great value. Some of the strongest life-long supporters of the College date from those times."

Until 1865, though the College was designed to teach agriculture, there was no professor of agriculture; the principles had not been formulated so that they could be taught. But, in 1865, Dr. Manly Miles who had been the

professor of zoölogy since 1861 became "Professor of Practical Agriculture and Superintendent of the Farm." He was the first man in this country to attempt such teaching or to outline such a course in an agricultural college. The reader may like to read his brief announcement from the catalogue of 1865. It will show what agricultural instruction meant at that early time:

"Practical Agriculture."

FIRST YEAR.

"Laying out of farms;
Farm fences;
Arrangement and planning of farm buildings;
General principles of tillage;
Principles of drainage;
Laying out and construction of drains;
Implements for preparing the soil for crops;
Mechanical preparation of the soil;
Methods of seeding;
Implements for seeding—their construction and management;
Harvesting of crops;
Implements and machines used in securing crops;
Principles of stock-breeding;
Breeds of domestic animals—their characteristics and adaptation to particular purposes.

FOURTH YEAR.

"General principles of farm economy;
Manures—their management and mode of application;
Succession of crops;
Preparation of the soil for particular crops;
Cultivation of grain crops;
Cultivation of root crops;
Cultivation of special crops;
Management of grass lands;
Stock husbandry;
Care of animals and principles of feeding;
Fattening of animals;
Management of sheep."

In addition to the above course, instruction was given in the field in the various manual operations of the farm. By a system of rotation in the assignments of labor, each student was made practically familiar with the different kinds of work.

If this first course in agriculture seems somewhat primitive it must be remembered that the kinds of work on a farm and the methods of doing it then were very different from those of modern times. For example, in hay-making one man, or two, three, or more men would work, each with a scythe and each cutting about an acre in a day. A boy or man followed with a light fork spreading the newly cut grass. When the grass had dried to some extent, each man moved the hay about eight feet in one direction with a hand rake, the next carrying it another eight feet, and the third man moving it likewise. Very likely the windrow consisted of three rakings on each side. If very dry, the hay was loaded by hand, drawn to the barn and pitched off into the

mow or stacked outside. Trained with such methods, reading little, possessing a very moderate education, we can hardly blame a young man for not attending an agricultural college. In 1857, and later in many portions of the state, the farmer needed to know how to cut down trees to advantage, to burn the brush when dry, to cut up and do the logging in due time, to harrow the land with an A-shaped harrow containing eleven or thirteen teeth an inch and a quarter in diameter, strong enough to bring up standing an ox-team without breaking. Then he sowed wheat by hand and harrowed some more. The next July he cut the wheat with a cradle, two to four acres a day, with a man following to rake and bind. He might burn the stubble, harrow and sow another crop of wheat, sometimes following with a third crop. He split rails and laid up a fence, seeded and pastured his land for a few years, then pulled out stumps with a yoke of cattle, possibly dug out and removed stones. He summer-fallowed the land to secure another crop of wheat. He had never heard of soil exhaustion, nor had he any knowledge of nitrogen, potash or phosphoric acid. Troublesome insects and weeds were few and bothered him little. He cleared one field after another to produce more crops. On the oak-openings, after cutting the trees up to three or four inches in diameter, he broke the ground with a breaking-up team consisting of four or more yoke of oxen hitched to a stout home-made plow.

Remember, too, that farming is the oldest of occupations, and one conducted for ages with little knowledge or skill; in other words an honorable occupation but one of a very low grade. Is it reasonable to expect that a great body of farmers—heirs of long generations of primitive methods should arouse in twenty-five or even fifty years and go in great numbers to learn agriculture in a college?

In the same way that the College found difficulty in getting to the point of giving real and practical instruction in agriculture, it found difficulty in getting away from the ancient methods of text-book instruction to the new and practical methods of laboratories and laboratory work. In 1866 there was but one laboratory; it was in old College Hall and was for chemistry; it was called *the* laboratory.

It was long ago discovered that old College Hall was built with only a half supply of windows. This marked defect has followed along down the half century of its existence, and has been rediscovered by every occupant, especially by teachers of botany, chemistry, mathematics, and zoology. The writer, after testing rooms for a small class where each member used a compound microscope, found during the forenoon that the southeast room on the third floor was the best one, but even in that the light was insufficient. He secured a new laboratory, but not until 1880.

What did the chemist, Dr. Kedzie, think of it? Read lines on page 48 of the report for 1866, of the Secretary of the Board of Agriculture:

“The need of a new laboratory must be apparent to any one who considers the necessity of abundant light and free ventilation in a laboratory devoted especially to chemical analysis. Facility in chemical analysis often depends entirely upon good light, as the evidence of the presence or absence of a given substance is found often in delicate shades of color, or in the existence of precipitates, which can be seen only in a good light. The present laboratory, 27x50, is lighted by two windows, and the tables are so arranged as to intercept a large part of the light. Some improvement has been secured by throwing the balance room into the laboratory, and thus securing a third window, but even now the supply of light is entirely inadequate in the best weather, and on cloudy and stormy days the students must frequently sus-

pend their analyses. There are no means of securing good side light in the present laboratory without injuring the architectural appearance of the Hall, and no opportunity whatever of securing sky light or vertical light, which is very important. The facilities for ventilation are equally unsatisfactory."

In 1867, there appeared the germinal idea of one of the most important of all the developments of the College—that of the short courses for practical farmers—though the development of the idea did not come until years later.



Map of Campus in 1870, when Dr. Beal began.

The suggestion came through the State Agricultural Society of which W. C. Beckwith was then President and as a result of a joint meeting between a committee of the society and a committee of the legislature. In the report of this joint committee the following resolution was adopted:

"Resolved, That we are satisfied that the industrial interests of Michigan will be subserved and promoted by liberal appropriations on the part of the legislature for the support of the Agricultural College, including items for a winter course of lectures."

The same effort to get short courses was also made at the annual meeting of the executive committee of the Michigan State Agricultural Society, held in Detroit in January, 1867. Hon. W. J. Baxter, of Jonesville, a member of the State Board of Education (1857-61) in charge of the College, made a report on that part of the president's address which related to the State Agricultural College, in which the following passage occurred: "Resolved, That we again recommend to the authorities of the college a course of lectures on agricultural and kindred subjects during the winter months, satisfied as we are that they would be largely attended by a class of farmers' sons who are partially released from the labors of the farm at this season of the year."

Early in July, 1870, the writer made his first visit to this College, then 13 years old, to teach botany during the summer. As a contributor to the *Prairie Farmer* he came with keen interest and wrote out his first impressions.



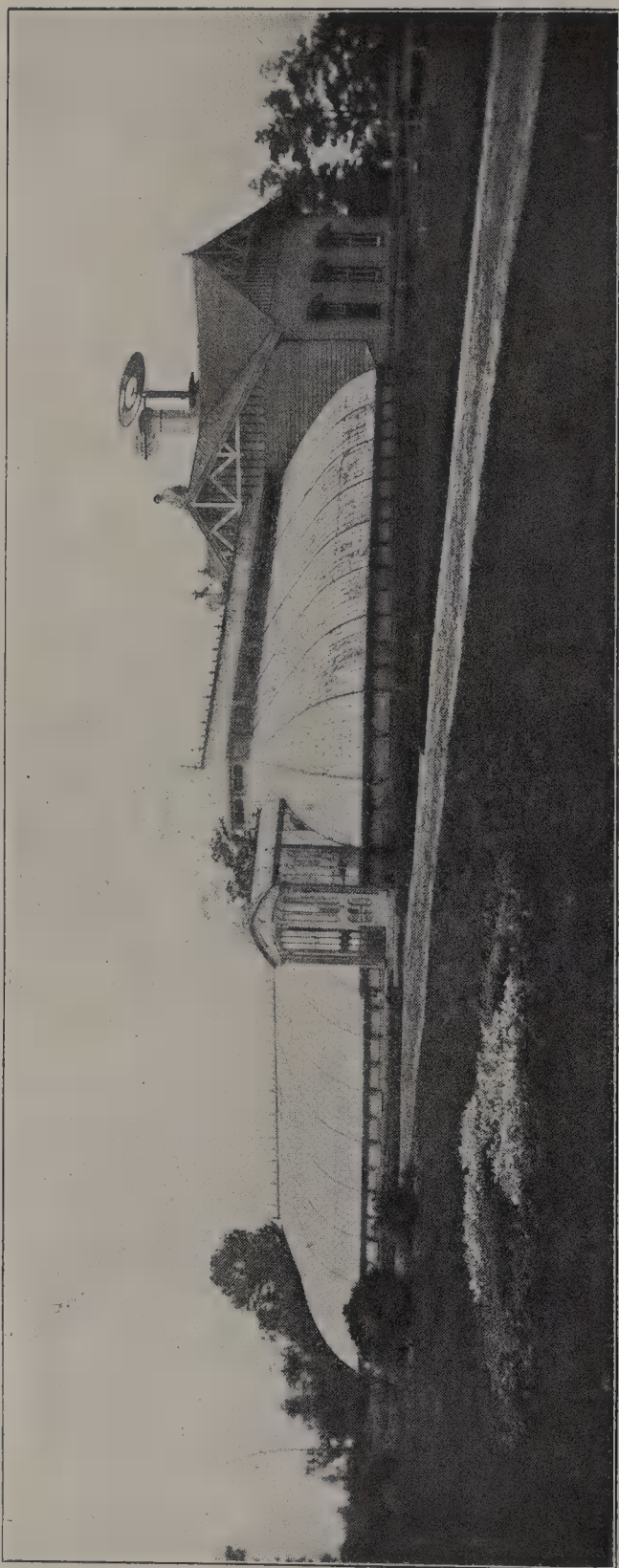
Williams Hall, built 1870.

Lansing was a town of 5,241 souls, in the midst of which was the old capitol, constructed of wood. There was but one railroad passing through the city. It was a line from Jackson to Saginaw and was of primitive style. The writer secured a ride to the College with a farmer, and on the way soon learned that many farmers within twenty miles placed a low estimate on the value of the "state farm," as it was often called at that time. The course extended over clay knolls and corduroy, the poles of which were to keep the wagon wheels from getting deep into the mire.

At the right of the main gateway, then nearly due north from College Hall, were four small brick dwellings for the president and three professors. The bricks for these and the two halls were manufactured on the college-campus, west of the present armory.

In 1870 the income of the College was less than \$40,000, the year closing with a deficit of \$6,000.

The College was young, poor, and small. No member of the faculty had a



Greenhouse built in 1873, by Lord and Burnham.

chair to himself, but "occupied a whole settee." For example, the professor of botany also taught history, some English, algebra, and civil engineering. The students took breakfast a little after six, and got out of chapel by seven, where the president called the roll. Classes extended over a period of four hours, all closing in time for dinner. For three hours in the afternoon all students were engaged in manual labor.

Fifty-nine students had graduated, of whom three had died. The ten women students selected such studies as suited them from the only course offered at the College, viz., the course in agriculture. Even at that day, President Abbot urged that some special provision be made for a course suited to women, including household economy.

The college year consisted of two semesters, beginning late in February and closing with commencement in November, thus affording an opportunity for students who desired it to teach a district school in winter.

In 1870 it was not difficult to plan a course of study for an agricultural college. Except some points gathered from manual labor, which were not numerous nor very important, the students received, all told, eight weeks of daily instruction in horticulture and ten weeks in agriculture, and these topics were chiefly taught by the slow process of lectures. There were few books and papers to aid students in their pursuit of agriculture. The College was in the woods, so to speak, with no model to follow. Nowhere in this broad country were students yet taught advanced stock judging, stock feeding, the examination of dressed meats, soil physics, dairying, plant breeding, plant histology, ecology, plant physiology, farm economics, the growing of forest trees, spraying for insects and fungi. Bacteriology as related to animals, dairying, soils, and plants was a sealed book.

As late as 1870, the College had very little contact with farmers by way of institutes or extension correspondence.

The catalogue along about these times makes the best of what the College has, mentioning a healthy location, the endowment of public lands to be sold, means of illustration, such as a botanic garden, a museum, the Cooley herbarium, and a museum of vegetable products, though the writer in 1873 speaks of a small beginning of a botanic garden aside from what is scattered about the campus. The faculty in 1870 had been enlarged and consisted of seven professors instead of four.

I append the daily program of studies as it appeared in 1871.

FIRST TERM.

Class.	8 a. m.	9 a. m.	10 a. m.	11 a. m.
Senior class..... {		Agriculture. Zoology.	Astronomy. French.	Landscape gardening. Civil engineering.
Junior class..... {	Analytical chemistry.	Analytical chemistry.	Praxis, four weeks. Analytical chemistry.	Drawing, six weeks.
Sophomore class..... {		English literature	Praxis, four weeks. Botany.	Elementary chemistry.
Freshman class..... {		Praxis, six weeks. History.	Algebra.	Book-keeping, six weeks. Physical geography.

SECOND TERM.

Class.	8 a. m.	9 a. m.	10 a. m.	11 a. m.
Senior class..... {		Mental philosophy.	Moral philosophy Political economy.	French.
Junior class.....		Mechanics.	Physiology.	Chemical physics.
Sophomore class..... {	Analytical chemistry.	Analytical chemistry.	Praxis, three weeks. Analytical chemistry.	Botany, ten weeks. Horticulture.
Freshman class..... {	Agriculture.	Praxis, four weeks. Botany.	Algebra, common. Geometry.	

After years of struggle, beginning about 1869, the College began to find itself and not only to grow somewhat more rapidly, but to win more of the approval of the state. In that year the legislature appropriated \$70,000, including money for a new hall, and the friends of the College were much cheered. In 1873, G. W. Griggs, President of the State Agricultural Society, in his annual address gave expression to this new feeling in these words:

"It affords me pleasure, and it cannot but be gratifying to all who feel an interest in the advancement of agriculture and mechanics in our state, to witness the flourishing condition of the Agricultural College. It is for the interest of the farmers of Michigan that they give to their sons a more complete education on the subjects relating to their profession. This is necessary to make farming successful and profitable. Agriculture and manufactures, I reiterate, are the basis of the wealth and prosperity of the country."

While many of the newspapers of the state, notably the *Detroit Free Press* and *Post* and the *Adrian Times*, had been bitterly hostile, it was pleasing to find this editorial in the *Detroit Tribune* in 1874:

"The Michigan Agricultural College has steadily worked its way into general favor.

"The careful and judicious management of the State Board of Agriculture the excellent, practical qualifications of the members of the faculty for their duties, all together have given the College a worthy name and record the world over.

"We are happy in knowing that at our Agricultural College there are no *stand stills*."

HEAVY WORK OF THE FACULTY IN AN AGRICULTURAL COLLEGE.

No one who has not been inside as one of the faculty of an agricultural college such as the one at Lansing in 1875, can have any adequate conception of the unceasing work and worry it requires. Growing crops take no vacations in summer, and to a far larger extent than in the older colleges and in classical schools, the faculty of an agricultural college must be on duty all the year round.

Besides teaching classes, most of the professors had care of student labor, must take inventories, write reports, answer great numbers of inquiries, show visitors about the premises, work in museums, plan improvements, prepare and make exhibits at fairs, possibly leaving a brief respite of one or two weeks during a year.

As an example of a busy life, the writer notes the report, in 1876, of Professor G. T. Fairchild, the professor of English literature:

"My absence from daily duties is all included in seven days taken for a visit to the Centennial Exposition, during which the president kindly undertook to provide for my classes.

"In conclusion I have only to deprecate the fact that my labor must be so scattered in many directions as not to give the best results in teaching, and to leave no time for studies that I need for my lectures, and that may bring advantage to the College. I feel that I ought not to ignore this need of my department."

The writer might quote his own reports for any one of forty years at the college with much the same showing.

In his report for 1876, Dr. Abbot also refers to the heavy work of the faculty, as follows:

"The combination of work and class-room duties throws upon our professors an amount of labor that cannot be easily appreciated by those who measure the duties of a professorship by those in ordinary colleges."

Especially did the hard work tell upon President Abbot himself, who was an invalid during all his active life, and compelled to give up work and suffer from sick headache once in one to four weeks. With the view to improved health, the Board granted him leave of absence for a trip to Europe from May, 1873 to May, 1874, and Professor G. T. Fairchild acted as President in his absence. However by 1875, this ill health was beginning to impair the president's enthusiasm and vigor. He missed Dr. Miles, who had been his companion for more than fourteen years, and the selection of Dr. Miles' successor had proved unfortunate. But President Abbot remained with patience and determination at his post.

In more recent years the burden on the staffs of agricultural colleges has grown steadily heavier instead of lighter. In 1875, a year ever memorable in the history of the College, and indeed of agricultural education, farmers institutes were first inaugurated (a full account of which is given elsewhere) and this added greatly to the work of many of the professors. Short courses, extension-work and many other branches of activity have also tended to broaden and intensify the work of the college staff.

SUNDAY SERVICES.

During these years, also, President Abbot kept up Sunday services at the College. In those times the ministers of Lansing were called upon to preach in rotation, though one of them permanently declined. But in spite of this, President Abbot himself was often called upon to preach. In the absence of street cars and with the frequency of bad roads, he usually attended chapel with a sermon ready at hand in case the promised speaker failed to appear. Besides this, the president also must have known that the college population much preferred hearing him, to listening to most of these ministers serving small congregations in a town of 5,000-10,000 people.

During the college year of 1876, President Abbot thus conducted the religious services seven times; in 1875, twelve times and during some previous years certainly more than twelve times. Again, the president preached oftener than he otherwise would, especially at certain times in certain years, for the reason that some members of the legislature questioned whether the College authorities had a right to use state funds to the extent of the paltry stated sum of five dollars per Sunday to pay ministers.

The whole service has usually been brief, frequently all told not over fifty minutes. Sunday schools and Bible classes have been maintained more or less uncertainly with frequent changes of teachers and students.

In 1859, and possibly at other times, while Professor Fisk was acting president, there was some "feeling" among students and faculty in reference to the selections of ministers from Lansing to preach at the College on Sunday. C. W. Knickerbacker, a Universalist clergyman, distributed a printed pamphlet dated April 28, 1859, signed by most of the students, requesting the Board of Education to ask Mr. Knickerbacker to preach in rotation with clergymen of other denominations. Some of the members of the faculty opposed inviting him, saying "Universalists are not considered christian." President Williams had favored inviting clergymen of every denomination in Lansing. For a time it was the rule to invite no clergyman, but ask the professors in turn to conduct the service. The writer is not certain just how the matter was finally adjusted.

CHAPEL EXERCISES.

In early days, students were routed out early, for they attended chapel at 5:30 and breakfasted at 6:00 A. M. Professor Cook says:

"The student of to-day knows nothing of the celerity with which a student may rise from his bed, dress, and get to chapel. Five minutes was a generous allowance. At that time there were monitors to see that students were all at prayers."

During most of his administration President Abbot called the roll at chapel and marked the absentees. But when his health began to decline, the attendance at chapel fell off, and it was usually attended by none or very few of the members of the faculty. In his report for 1882 he says, "I have had charge of the daily morning devotional exercises of the students. No other officer attends."

But later, by his genial way and personal solicitation, President Willits after assigning a seat to each member of the faculty, succeeded in inducing a full and regular attendance, which also induced the students to fill up the benches fairly well.

Beginning about 1885 the chapel exercises were voluntary, the number in attendance very fluctuating. For a time at chapel a student or two varied the program by making a speech. President Willits was most earnest in the matter and entreated members of the faculty to attend, and directly or indirectly urged each student to attend. As a rule, the larger the number of students in college, the smaller the attendance at chapel. For many years the chapel exercises had been held in the morning from 7:40 to 8. President Snyder thought this was an unfavorable hour, especially for those living in Lansing. Then the four morning hours were each "shortened" five minutes, leaving twenty minutes for chapel during the middle of the forenoon. Perhaps this scheme was a little improvement, it certainly suited a number of students, especially in fair weather, for it furnished a most favorable opportunity for securing a little fresh air in connection with "campuistry," and the time was improved and became more and more popular. In 1909-10 certain members of the faculty, announced beforehand, occupied in rotation a few moments each with a talk on some appropriate subject, religious or otherwise; such as the peculiarities of a German university, a visit to Scotland, description of a Spanish bull fight. With all of these efforts in the past, including also several musical instruments in connection with the singing,

the number attending settled down to about fifty persons or less, till in the winter of 1911, the non-attendance at chapel was made unanimous. Years before, chapel exercises at the University had met with the same fate as those at Michigan Agricultural College.

HISTORY OF THE COLLEGE ORCHARDS.

Reference has been made to the first apple orchard set well toward the northeast portion of the farm, by President Williams in 1858, and to the first pear orchard, set in the hollow southeast of the house of the president, on the hill, and the freezing of this orchard in 1873, when the thermometer registered 33° below zero. In the spring of 1876, the writer set on the clay hill west of the president's home, 50 pear trees, 35 plums, 87 cherries. The next year one hundred more pear trees were set to the west of those planted the year before. As was to be expected, the sweet cherries were short-lived on account of our severe winters, perhaps also to some extent on account of the stiff clay soil, to which they were poorly adapted. Most of the plum trees were short-lived. Owing to exposure, this orchard on the hill has been a source of annoyance, owing to depredations by students and people outside. It was cut down in 1913.

The trees for the apple orchard selected and planted by President Williams were about fifty years old when, in 1906, Professor Fletcher thought most of those still alive had outlived their usefulness. In the M. A. C. Record for Oct. 31, 1905, he says:

"It is planned to remove this winter all of the old orchard of four and one-half acres, but four rows of Spies, which will be kept for class work. They were planted on a poorly drained site, where the hard-pan comes close to the surface in some places, they have made the twisted growth of trunk characteristic of such sites, with the result that all the trees have split apart very badly, and nearly a third have already been removed. Of the remainder there is not one that is not rotten-hearted and maimed. The land will be rested in clover for a few years before being used for experiments in horticulture, but it is not considered advisable to set fruit trees upon it again, because the site is too low and wet."

The years from 1873 to the end of President Abbot's service in 1884 were marked with the establishment or beginning of many new things, now familiar, at the College. The writer will merely refer to them, giving their dates, for the sake of making the record complete.

In 1873, the Arboretum was started near the highway; now in 1913, forty years ago.

In 1874, the two rustic bridges, so long a familiar sight at the college, were made, of oak logs, peeled to make them more durable. One was a foot-bridge over the open ditch by the seven willows in the path from the professors' houses to the college buildings. The other was a wagon bridge, 16 feet wide, with five piers, over the brook and hollow just west of the chemical laboratory. These bridges were much admired by almost everybody.

The college dormitory, commonly called the Old Hall, was burned December 9th, 1876. It being vacation no students were occupying it, but the hall was undergoing repairs at the hands of masons and carpenters. The legislature convened soon after election and appropriated \$25,000 for a dormitory afterwards known as Wells' Hall after Hezekiah G. Wells.

In 1878, the writer prepared the first popular account of the trees on the grounds; duplicated copies were reserved for students and visitors.

In 1879, the forward move on temperance known as the Red Ribbon Movement was active at the College.

In 1879, Professor George T. Fairchild, after fifteen years of faithful service resigned, to become president of Kansas Agricultural College.

Under the direction of Professor R. C. Carpenter, an ice-house, 20x30 feet, was constructed, in 1879, near the dam across the Cedar.



Observatory, built 1880.

In the fall of 1878 and spring of 1879, the setting of the double row of elms along the highway, now familiar to every visitor at the College, was completed. As on some previous years, C. S. Sargent, Director of the Gardens at Harvard, very generously gave the College a large number of hardy and green-house plants, most of which were soon lost because the college force was inadequate for their care.

Of a new society, President Abbot had this to say, in his report for 1880:

"It may be not out of the way to mention the fact that a new society was formed in Boston the present year, by persons in attendance upon the sessions of the American Association for the Advancement of Science,—a society for the advancement of the science of agriculture. It is made up of a few earnest workers in agricultural chemistry and vegetable physiology. Dr. Kedzie, Dr. Beal, and Professor Cook of this College are among those who have organized it, and Dr. Beal was made its President. The society holds its next meeting in Cincinnati, August 17th, 1881. Persons become members only by invitation."

In 1881, the legislature, unasked, made an appropriation of \$1,000, chiefly for experiments in ensilage, to be conducted by Professor Samuel Johnson. A silo, 14x15 feet, with walls eight feet high, was placed in the northeast corner of the basement of the grain barn. In 1887 a second silo was built, 18x30 feet square, to hold 150 tons of silage, located just north of the old cattle barn.

Professor R. C. Carpenter deserves credit for getting a telescope and accessories in good working trim at the College. The instrument is a fine one; it is mounted to move by clockwork, and although rather small—the lens only $5\frac{1}{2}$ inches, was manufactured by the celebrated firm of Alvan Clark & Son. The observatory, located just northwest of the professor's residence, is of brick, with movable roof.

In June, 1882, for the first time the farm department purchased a twine self-binder.

SPECIAL WORK IN CHEMISTRY.

In connection with other work done by students in chemistry, the following is given in the college paper for June 1882:

"Dr. Kedzie received a sample of 'Palmer's Plant and Vine Protector,' for analysis. It is claimed that it protects plants from all insects, and 'at the same time invigorates their growth.' It contains about seven parts of bran or shorts and one part of cayenne pepper."

About one year later a list of a dozen humbugs was reported.

"The sophomore class in their work in chemical analysis combined work and play in the analysis of various substances which at different times have flooded the markets of our state. Some of the results already reached by the class are given here, with the cost of the article and the price at which it was offered for sale:

"1. Coaline. Eight ounces of sal-soda (carbonate of sodium) in a gallon of water, with a few drops of nitro-benzol to give it an agreeable odor. Cost, 3 cents a gallon; retail price, 40 cents.

"2. Silver Plating Fluid. An ounce vial of solution of nitrate of mercury, which will form a temporary silvery coating when rubbed on brass, copper, or silver, which speedily tarnishes when exposed to the air. Cost 3 cents; retail price, 50 cents.

"3. Nickel Plating Fluid is the same as 2, except that a little nitrate of copper and nitrate of nickel are added to the solution of nitrate of mercury. Cost 3 cents; retail price, 50 to 75 cents.

"4. Fire Test Powders to prevent explosions in kerosene lamps, the breaking of lamps and chimneys, and the danger of burning from the use of low-grade oil. These are pill-boxes containing one or two ounces of common salt, colored with analine red. Cost, 1 cent a box; retail price, 60 cents, or two for a dollar.

"5. Fire Proof Powder from Wisconsin is water lime. Cost, $\frac{1}{2}$ cent; retail price not known.

"6. Silver Polish. Pill-box filled with water-lime. Cost, $\frac{1}{2}$ cent; retail price 25 cents.

"7. Ozone. A package of about $\frac{1}{2}$ pound weight, consisting of pulverized sulphur, colored with lamp-black and scented with oil of cinnamon. Cost 4 cents; retail price, \$2.00.

"8. Spear's Preservative Fluid consists of one ounce of bisulphite of soda dissolved in a pint of water. Cost, 5 cents; retail price, \$1.50.

"9. Marie Fontaine's Moth and Freckle Cure. 'For external use only. Put the contents of this package into an eight ounce bottle, and then fill with rain-water.' The package contains 32 grains of corrosive sublimate, or mercuric chloride. Cost, $\frac{1}{2}$ cent; retail price 50 cents.



Dwelling for the Entomologist. Built for a bee-house, later built over.

"This is only a part of the nostrums examined by the class in chemical analysis, and other substances, such as Sozodont, Mrs. Allen's Hair Dye, and St. Jacob's Oil await their turn."

This work was instructive and popular.

About one year later, a report of a similar nature was printed in the *Speculum*, another in 1884, and still another in 1885.

STUDENT GOVERNMENT AND DISCIPLINE.

Even when the number of students was small, there was at times a great lack of order in the dormitories, much to the annoyance of students, faculty

and visitors. Perhaps it was in 1878, report came that at Iowa Agricultural College there was in vogue a system of self-government among the students that was very successful. It was tried at M. A. C., as numerous other devices have been tried from time to time.

The prime object was to maintain order in the dormitories, and secure the general comfort of students. There were usually ten rooms in a "district," each to elect one captain and one lieutenant, all elections to be subject to the approval of the president of the College. The duties of the officers of the students' government were, to arrange all trials and act as judges. Captains and lieutenants were to make it their first duty to prevent any disturbance within their districts. Rules were also made concerning testimony, verdicts, penalties, records, appeals and pardons. The plan was too complicated and was soon modified, though, when well looked after it was a partial success.

The following is a portion of an editorial in the *Speculum*, of October 15, 1884, H. E. Thomas, '85, editor:



President's House. Built 1874.

"It has been, and is, asserted by not a few, that the students' government is becoming a failure. We do not think that this is altogether the case; but, on the contrary, think it is the best means that could be provided for bringing about and maintaining the objects of the system. But the administration of affairs has been for a long time so loose that it has become a sort of habit to allow matters to run about as they will.

"The persons who have the immediate oversight of such matters are, of course, the captains and lieutenants. But it is too often true that these men are elected, not because they will attend to their business, but because they will not; they are frequently men who either will not or are afraid to report any misdemeanors."

The success or failure of self-government of students calls to mind the success or failure of a law prohibiting the sale of spirituous liquors in a village or city. If some capable officers spend much time as detectives and are vigilant in prosecutions; the law will be a success, but if the law is left to

enforce itself, the saloon men are ever ready to sell liquors to all that ask for them at all times of day or night, Sundays not excepted.

When the president or some other officer of the college followed up the work, students' government was a great success.

In his report for 1884, the same year in which the above editorial was printed, President Abbot says:

"The students' government has been well sustained, the members have been judiciously chosen by the students and the organization has been of essential service in preserving order and general good conduct, and in looking in various ways to the comfort of students and visitors. The captains and lieutenants have met the president once a week, on Mondays. The students have been generally orderly and harmony has prevailed."

In 1884, Lieutenant J. A. Lockwood was detailed by the president of the



Dwelling No. 2 Faculty Row. No. 3 is same style, built 1874.

United States to serve as Professor of Military Science and Tactics, the first "military" man to be thus appointed. In the same year, a U. S. post-office was established at the College with R. G. Baird postmaster. German carp were placed in the pond at the botanic garden, with the view of prosecuting fish culture, but fortunately for the College the fish escaped. Attention was again given to the bill before congress to grant means for conducting experiments; the State Board resolved to admit pupils from approved high schools to the freshman class without examination, spoken of as "by a certificate." The triennial meeting of the alumni was held August 16, this year, with S. M. Millard '64 as President; among the needs mentioned was a general assembly-hall. This has been needed from 1884 to the present time (1913) 29 years. The legislature of 1911 made an appropriation for such a building but the bill was vetoed by Governor Osborn.

In 1884, T. C. Abbot made his last report as president and in review writes as follows:

"The college passed, owing to a faith in the general plan of it on the part of the people of the state, through the dark days of the rebellion. In 1860, it had no income except legislative appropriations, and had less than fifty students in all. The Congressional grant of 1862 gave the College the



Corn house built 1878 by Professor C. L. Ingersoll.

strong defense of hope, but it was not until 1870 that the institution realized an income from the sale of lands. By scrupulous impartiality of treatment of political parties the College has passed from being called the expensive pet of one party, to being, I believe, one of the institutions of the state, whose interests all the people gladly combine to further, and in whose prosperity they all delight. I early laid it down as a rule that no opposition to the College should be held to be a ground of ill feeling against any per-

son, and now I have the pleasure of seeing former opponents of the College among its warm friends, and the principal agricultural organization of the state among its best supporters. The State Agricultural Society, State Horticultural Society, and State Grange all endeavor to make known and recommend the College. Personally, I have cause to be very grateful for the patient encouragement which these organizations, and the several farmers, stockmen, and horticulturists have extended to me, as an individual, as well as to the College over which I presided.

"Now as I look abroad, I see where over three hundred graduates form the best of our strength, in the communities where they dwell, and a series of winter institutes. At home I look upon grounds which are models of beauty, upon good buildings for nearly every department, upon stock and other equipments of an Agricultural College, second to those of no institution of a like character in the land.



Dwelling No. 8, Faculty Row.

"Surely, I can but carry out of the Presidency grateful memories of members of the Board and of previous Boards, of the officers of the College, its long succession of students, and of the citizens of the state whose encouragement and friendship I have so constantly enjoyed. Surely I can but wish for the College, under some new President, enlarged prosperity and success."

Let us turn back twenty-two years over President Abbot's administration, during two-thirds of which the writer was an employe of the College. In his first report appeared a clear statement of what he termed "Objects of the Institution" which he stood steadily by throughout his term of office, though they were essentially the same as those set forth by President Williams.

On first coming to the College he became a warm friend of President Williams, and studied with appreciation his ideas as to what the Agricultural College should become. This study led him to a cordial acceptance of the main ideas that had inspired the early friends of the College in their efforts

for its establishment, and that had been taught and practiced by President Williams during his brief administration.

The College was embarrassed by starting in the woods nearly thirty miles from a railroad, with horrid wagon roads intervening, and by having no model to follow. It was sorely pinched for means for growth; it was rent by the civil war; it was harassed by efforts to make it a school of the university. For most of his term of office, there was but one course of study for all, with no electives. Trouble came from the employment of a number of men ill fitted for the work they attempted; the management of compulsory student labor added much to the difficulties; the teachers were overworked for fifty-two weeks in the year. Among the improvements the farm was mapped out into fields, the library grew slowly from 1,200 to 8,000 volumes; the pear orchard, set in a hollow, died and another was set on the hill; scrub cattle were slowly replaced by thoroughbreds; the Board of Agriculture re-organized the College, a pioneer with a meager equipment, and very few constituents by way of alumni. With all these and more obstacles to meet, President Abbot, with unfaltering hope and good humor, made the very best of the limited resources at hand and kept steadily on from year to year.

We wonder the task was not abandoned, but the national land-grant was a bright ray of light. The agricultural society, the state grange, the pomological society and portions of the law-makers were friendly. The College slowly emerged from forest and swamp, and gained friends.

At this point the reader will naturally wish to read the biography of the president, in another part of this volume.

CHAPTER V.

PRESIDENT WILLITS' ADMINISTRATION.

July 1, 1885—May 1, 1889.

On November 24, 1884, Dr. T. C. Abbot tendered his resignation as president, but continued to act in that capacity until July 1st, 1885. Hon. Edwin



EDWIN WILLITS.

Willits, principal of the State Normal School, was elected president of the College on the day President Abbot resigned, and assumed the duties July 1, 1885.

The year 1885 was a memorable one in the history of the College. Not only was there a change in the presidency, but there were important changes in the faculty; there were a number of new buildings constructed and, most notable of all, a new mechanical and engineering department was organized.

On August 4, 1885, after a severe illness of six months' continuance, Robert G. Baird, who had been secretary of the Board and College since Aug. 25, 1875, died, and Henry G. Reynolds, of Old Mission, was elected to succeed him.

Jan. 1, 1885, James Satterlee, Professor of Horticulture and Landscape

Gardening and Superintendent of the Horticultural department since 1883, closed his connection with the College by resignation; in the same month Liberty H. Bailey, Jr., was elected to his position. Professor Bailey served until August 16, 1888.

During the year an armory or assembly room for military drill was built, also a veterinary laboratory and a mechanical laboratory, shops and class rooms, the latter building being designed by Professor R. C. Carpenter and erected at a cost of \$7,800.

Professor Lewis McLouth, of the State Normal School, was elected to take the lead in the management of the new division of mechanical engineering, later spoken of as the division of engineering.

April 4, 1885, marks the death of Hon. Hezekiah G. Wells, who had served, with a slight interruption, as a member of the State Board of Agriculture



Dwelling No. 10, faculty row, built 1885.

from 1861 to 1883, a period of twenty-two years. During much of the time he was president of the Board.

One of the first duties President Willits was called on to assume was to attend a convention of agricultural colleges and experiment stations, held at the department of agriculture in Washington, D. C., July 8th, 1885. He was invited by the commissioner of agriculture, to read a paper on "Industrial Education." Thirty-one states and territories were represented, and the discussions were of great interest and of mutual benefit.

Agricultural education received a substantial impulse. It was "an effort to bring all the agricultural colleges and experiment stations into harmonious co-operation through the department of agriculture, so as to assign and develop more systematically the experiments devised, and to secure a consolidated report of the results. It was found that in nearly all cases the colleges and stations were crippled for means properly to conduct and report the experiments."

The convention appointed a committee to present the matter to the next congress. The committee consisted of President Atherton of Pennsylvania College, President Lee of Mississippi Agricultural College, and President Willits who were to visit Washington for that purpose, the December or January following.

On the nineteenth day of August, President Willits delivered an inaugural address consisting quite largely of a history of the College with remarks concerning the different departments and their work. Concerning the new division of mechanic arts, he said:

"The time is now propitious for the new department. It was hardly practicable to establish it sooner. There was no great public demand for it. The grant was in fact in advance of general public sentiment, but the leading spirits who advocated the land grant saw that in the near future industrial education, in all its phases, would be a leading factor in our educational system and that, as the mechanical industries grew, instruction in the mechanic arts would become the subject of a live demand. It is so today. It has the platform for legitimate deliberative discussion, and all over the country the best equipped minds and the brightest intellects are engaged in this, to us, new leading topic. Continental Europe, older in these industries, long since saw the necessity for special attention to the matter, and during the last fifty years has expended large sums in schools of technology, and the promotion of sciences lying at the base of all the industries. The result has been marvelous."

President Willits received an enthusiastic greeting on assuming his duties at the College. He reports: "I have visited many meetings of the alumni of other institutions, but never have I witnessed so lively an interest. It struck me as something peculiar to this College, and upon this fact I base in a large measure the future permanent prosperity of the institution.

"We can accommodate with reasonable comfort in the halls and on the grounds, 230 to 250 students and no more unless the number of opportunities outside increase.

"This brings us face to face with a more serious question. We have a plant here that has cost nearly or quite \$400,000, and it justifies and demands at least 500 students. At the last commencement, in an address from the platform the governor of the state said the institution fell short of its duty if it had less than 500 students; and any person who has taken the time to investigate our unexcelled facilities for instruction, will feel warranted in coming to the same conclusion."

President Willits infused new life into the institution, and the increase in the number of students and in the interest of all concerned soon became apparent. Especially did President Willits show ability in dealing with the difficult problems of dormitory life. Soon after arriving at the College he discovered that rooms in the dormitories could be improved in appearance. He talked to students collectively and individually and kept right at it. He visited the students' rooms, looked after their brooms, dust-pans and rubbish boxes, and especially after any defacing of the walls. If he discovered a pencil mark, he saw that it was erased, not to-morrow or maybe next week, but right away, and he talked about the subject. Daily or weekly visits to the halls, without scowling tirades, but with earnest appeals to pride and decency had their effect, and students in general soon fell in with his plan. During my forty years at the College, no one ever succeeded as well as President Willits in keeping dormitories tidy. It was worth while and he knew how.



First Botanical Laboratory; First Wells Hall, Chemical Laboratory at extreme left.

His enthusiasm also helped the professors in their work. It is gratifying to record the following concerning President Willits by Professor MacEwan: "To you I am under great obligation specially for your prompt response to every request for assistance when the work has been more than I could do alone."

Professor Grange was also much encouraged by the cordial and sympathetic attentions of President Willits.

Dr. Beal refers, in the annual report of 1886, to the new president in this way:

"In closing, I cannot help telling you how much I appreciate the great interest and cordial support in word and actions you have given the botanical department. It does one good to see your enthusiasm spreading through all the work of the College from the faculty and students to the humblest employee. It certainly bespeaks a rapid growth and greater efficiency of the Michigan Agricultural College."

This feeling of satisfaction under the new administration was also felt by outsiders. In his annual address E. O. Humphrey, president of the state agricultural society refers to the College:

"Our annual visit to the Agricultural College in June was a very interesting event. It strengthened my conviction more firmly than ever of its importance and usefulness in promoting the interests of agriculture in our state. Its well arranged appointments speak well for the management of the institution. The systematic arrangements throughout the college buildings and farm, the superb judgment and taste exhibited in the selection and breeding of stock and the well cultivated fields, is a worthy example for any of the most exalted taste and ambition, and the young men who have the opportunity and benefit of that institution are highly favored."

In these years (1885-1886) of revived interest, it will be valuable to note some of the activities of the staff and faculty and their recommendations regarding their departments:

The Librarian, Mrs. Merrill, called especial attention to a pressing want in 1885:

"The librarian feels it a duty to call attention to the need of a work-room and store-room; the library is growing quite rapidly and all accessions and accumulations must at present be handled in the sight and hearing of all readers and visitors."

This want has been mentioned nearly every year for twenty-nine years and in 1913 is still unsupplied: an appropriation to cover this want and more passed the legislature in 1911, but the bill was vetoed by Governor Osborn on the score of economy. Economy!

Professor Johnson inclined to the opinion that educational labor on the farm and garden could succeed only when placed on a par with laboratory work.

Professor Louis McLouth was busy all the spare time at his disposal visiting the oldest technical schools, and with Professor Carpenter urged more room for students in shop and dormitory. And he added this interesting early suggestion as to extending the facilities of the College for women students:

"We have now a dozen or more young women in our classes, and the number will naturally increase as fast as opportunities are offered, and yet no provision is made for their industrial training in any direction. I know of no reason why industrial schools should not offer to young women, as well as to young men, courses that are intended to fit them for their own proper

industrial pursuits. We are not offering anything in the nature of handi-craft instruction suitable to their sex.

"Permit me, then, to suggest to you, and through you to the Board, that, as soon as may be, and this could be easily provided for if the proposed addition to the mechanical building is secured, a suitable room be fitted up for a women's industrial laboratory, where, for a couple of hours each day, while the young men are engaged in the fields or shops, the young women may practice and learn such light handicrafts as are suitable.

"Again, as I hear that a building for a young women's dormitory may possibly be asked for, I would suggest that a model kitchen and dining-room be fitted up in this proposed building, and that they be put under the direction of a competent lady as matron and instructor in domestic economy and household art. I believe by doing this we can greatly enlarge the usefulness of



Howard Terrace built in 1888 for the use of small families; now a dormitory for women.
Named for the first Secretary of the Board of Agriculture.

the College by making it as helpful to the young women of the state as to the young men."

I call attention to a plan approved by the professor of English language and literature, viz: to bring the English teaching into closer connection with the science teaching; Professor L. H. Bailey and the writer each assigned topics in horticulture and in botany respectively for descriptive essays that counted in the department of English.

As the timber was rapidly disappearing in northern Michigan, considerable discussion arose as to the value of these stump or cut-over-lands. The writer made a suggestion to President Willits that Professor Bailey and himself, with two or three others, make a trip across the state in May from Harrisville in Alcona county to Frankfort in Benzie county. Instead of opposing the scheme on account of the expense or for any other reasons, President Willits believed it would be profitable and soon decided that the College should pay half of the expense and the Experiment Station half.

Right here, let me take note of a kind and thoughtful act of President Willits. On his own initiative he made a special trip to Detroit, interviewed the editors of two leading papers. Consequently each sent a reporter who was with us for nearly the two weeks of the journey and wrote a column or more daily concerning the country we passed through. With the photographs taken and reports made was not the exploration profitable?

Professor Bailey took up his new work in horticulture and landscape gardening with great enthusiasm. During his second year at the College the horticultural building, the first laboratory in this country devoted wholly to horticultural work, was completed. He also extended the gardens and orchards. He reports in 1886:

"The most notable new feature of the department is a fruit garden which has been set apart this year for the double purpose of testing new varieties of



Horticultural laboratory. Built in 1888.

small fruits and of furnishing illustrative labor to students. It comprises four acres of variable soil. It has been enclosed in a double windbreak composed of a row of maples alternating with a row of spruces. It is expected that the maples shall be removed when the spruces become large enough to afford protection. A thorough system of tile drainage is being placed under the garden. Most of the fruits which are growing in the fruit garden were set last spring, or early this fall in the case of strawberries."

Owing to repeated changes in the professorship of horticulture these plans have not been followed. Professor Bailey planned to take out the row of maples and leave the spruce; the reverse has happened. It is questionable whether the windbreak has proved of any benefit in this case. The location for a fruit garden was as suitable as any place available, but in many respects has proved disappointing.

In his report for the next year Professor Bailey says:

"Most of the pioneer work upon the department has now been done, and very many of the unpleasant features of the duties imposed upon the depart-

ment have been overcome. The horticultural building is nearing completion. Upon the whole this building is well-planned. This is the first distinctively horticultural laboratory in this country. But despite the fact that much of the pioneer work of the department has been done, there yet remain many annoyances and burdensome features which could easily be remedied. By far the greater part of the work of the professor of horticulture is concerned with matters which are not strictly horticultural. The scavenger and errand work of the institution, at least, should not be imposed upon this department. Some means should be provided for irrigating the gardens, or portions of them. I feel more strongly than ever the need of more supervision of student labor."

The most difficult and exciting period in the entire history of the College occurred during President Willits' term of service. It centered around the trouble which arose between Professor Samuel Johnson and the students of the College.

Samuel Johnson was elected Professor of Agriculture December 1879 and continued until August 1889.

He was a successful farmer, had been a member of the legislature, was a member of the M. E. Church, and in every way was an exemplary citizen.

He had not been in service at the College many months before his students and a number of professors discovered that his knowledge of the science (not the art) of agriculture was very limited—too much so to command the respect of students, who began to chafe. Professor Johnson could not be made to see that no power of faculty or Board can keep order in the classes of a teacher unless that teacher himself can command the situation.

Instead of leaving the discipline of students to the faculty, where by law it belongs, the members of the State Board of Agriculture took the reins in hand, finally suspending eighteen seniors for a year and leaving matters in a deplorable condition—the College receiving hundreds of columns of disagreeable free advertising. This occurred during the administration of President Willits, who, one would suppose, would have long before taken some action to settle the difficulty by counselling the members of the State Board.

The trouble between Professor Johnson and the students for many years led to increasing friction and finally resulted in a forced resignation of Professor E. J. McEwan, a very popular and thoroughly competent professor of English, also his assistant, H. R. Pattengill, a most capable man, later state superintendent of public instruction.

After long delays, much discussion and the passing of some resolutions in support of Professor Johnson, the State Board of Agriculture in August, 1889, demanded his resignation.

In his final report in 1889, Professor Johnson thus recalls the improvements made during the ten years of his professorship of agriculture; the old cattle sheds had been remodeled, a grain barn had been built, and the first silo constructed. Other improvements included a new house for tools and implements; an experiment barn for feeding cattle; a water supply to the barns; a new iron bridge over the Cedar; a second silo; a sheep house for experiments; a grinding room in the barn; a large amount of tile laid; fields cleaned of stumps and stones; trees planted along the lane; a new road to the Trowbridge station; the stock much improved. In fact, Professor Johnson thought the farm and its equipment were in almost perfect order.

"In closing this my formal report as Professor of Agriculture," he says, "I desire to record my appreciation of the friendship and support of certain members of the Board of Agriculture.

"I have served the College ten of the best years of my life. I never asked for a vacation nor complained of overwork."

In April, 1889, President Willits left his work after a period of about four years at the Michigan College to assume the duties of assistant secretary of agriculture, a place that had a peculiar charm for him. His service in congress had gained him many acquaintances and given him valuable experiences. His new position also afforded him an opportunity to drop some work at the College that had become irksome. During the latter part of President Abbot's presidency when his health impaired his vigor, a committee of the



FACULTY 1889.

President Willits, Kedzie, Simpson, Beal, MacEwan, Reynolds, Carpenter, Taft, Cook, Grange, Johnson, Durand.

State Board, Henry Chamberlain, chairman, took mostly into its own hands the selection of professors and other employees, among whom were a number that were not at all suited for the positions they were to occupy. Before accepting the position of president, Hon. Edwin Willits did not have an "understanding" with the Board about this important matter, and the Board kept up the habit of making selections. To be plain about it, the president did not have the will power or backbone to assert his authority, and this method of control did not work to the advantage of the College. Though possessed of many strong points, President Willits did not have any adequate conception of how to make or select a course of study.

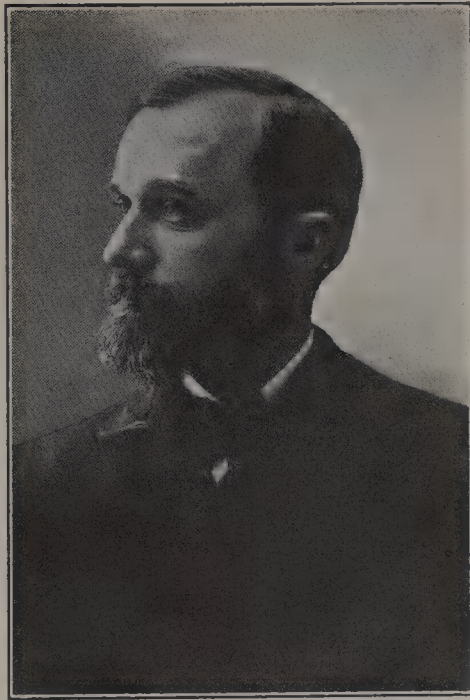
CHAPTER VI.

PRESIDENT CLUTE'S ADMINISTRATION.

May, 1889—August, 1893.

Oscar Clute, '62, was delighted to come in May, 1889, and take his place as president of the Michigan Agricultural College, his alma mater, in place of President Willits, who was as much delighted to take his departure.

There were in 1889, many changes in the faculty, some of which were very



OSCAR CLUTE.

unfortunate in their effect on the growth and prosperity of the College. The following resigned during this year:

President Willits, Professor Johnson, Professor MacEwan, Professor Pat-tengill, three of the twelve full professors; also Foreman H. T. French, and Instructor F. H. Hillman.

The enrollment of students at the opening of the college year in 1889 was the largest ever in attendance; in 1890 the number was 369. Indeed, the college stream was steadily widening. There were twenty-five resident graduates in 1889; the number varied from year to year but reached its highest in 1891 and 1895, when there were thirty-seven graduates in attendance, after which the number rapidly dropped, probably for the reason that the professors had all they could do to teach undergraduate students

and conduct experiments, and did not advertise or make special preparations for advanced students, who mostly went to some one of the universities, such as Cornell, Illinois, University of Ohio, Purdue or Wisconsin.

In his first report, October 31, 1889, President Clute briefly surveyed the field, noting improvements and changes: "Its able professors and beautiful location make it a desirable place for a summer school, suggesting that there might be a summer camp in the drill hall." At the state fair a large and attractive exhibit made by a number of the departments, drew great crowds. The plan was outlined to expand the Veterinary department into a school giving graduates the degree of V. S. (Veterinary Surgeon).

Professor E. Davenport, now Dean of the Agricultural College of the University of Illinois, came in 1890 to be Professor of Agriculture in place of Samuel Johnson. His first report of his work is illuminating:

1. Class room instruction to 175 students a year upon one of the most live but least understood subjects of human knowledge—agriculture.



Entomological Laboratory. Built 1889 as first agricultural laboratory.

3. A farm of 300 acres of cleared land, originally swamp lands. The extravagant expectations of this little farm are amusingly betrayed in the question often asked—"Does the farm raise enough to feed all the students and sell enough to pay the professor's salaries?" "Does the farm support the College?" is a question to be frequently answered.

4. "Experimental inquiry after new truths and a perpetual still hunt after facts.

7. "A large amount of clerical work, and many visitors to show about. This last is a great pleasure although it creates serious demands upon our time.

"I would even have a Texas steer before his kind is gone forever, and when tired of him mount his skin as a specimen of a race of cattle going never to return. The same might be applied with added force to that grand animal, the American bison. In a few years money will not buy what is yet within easy reach, and both afford an object lesson stronger than any lecture on the benefit to be secured by breeding and selection."

During 1891, Professor Davenport took a leave of absence for six months studying agriculture in the east and south. Improvement was made in the fields; the lane was graded; the mature timber, mostly oak, was removed and sold. Professor Davenport had surveyed and drained plats for experiments which he had designed to carry on for a series of years.* He had shown unusual tact and skill in the work during the brief period of two years, but alas! he resigned to accept the presidency of the first agricultural school in South America, just as he had fairly got under way in plans for breeding cattle, for teaching students, for making experiments. This move may have been a good thing for South America, but agriculture at M. A. C. dropped again to the foot of the ladder, where it would take a successor another two years to get fairly on his feet.

These frequent changes of professors and instructors have been the severest handicaps which the College has had to meet. During 1890, for example, there were changes of ten professors and instructors. Among them, the College lost Professor R. C. Carpenter, who resigned to become professor of experimental engineering at Cornell; and Dr. Howard Edwards took the place of Dr. E. P. Anderson, resigned.

THE YEAR 1890.

The writer here summarizes some of the principle events of the year 1890, taken from the reports of the various departments.

Professor Taft reported the pear orchard in excellent condition; the sweet cherries nearly all killed by severe winters, aided also by a stiff clay soil. The Professor carried out his belief which has become well substantiated by all good orchardists in Michigan, that no orchard should ever be permanently seeded down to grass. He cultivates thoroughly from early spring to about the first of August, weeds never troubling him.

Professor A. G. Gulley took the place of Professor Charles S. Crandall as second man on the department. Dr. Kedzie for the department of chemistry made a short report stating he was holding his own, as he had for twenty-seven years past.

Professor Cook appreciated his good help and told all readers about it but he had a lurking suspicion based on past experience that he would not be able to keep assistants long unless the salaries were made higher. He was pleased with the increase in resident graduates and the good attendance of extra summer students. A fine addition to the insects, Orthoptera, had been received from Nebraska, and others from New York City and Washington, also a generous gift by Senator McMillan of 10,000 species of insects. The professor published a small timely work on the silo.

Professor Simpson, in charge of military drill, like his predecessor, recommended that discipline be given a value in the standing, and that a student be required to be proficient in discipline in order to graduate. All absences from required duties, unless the student be excused by competent authority, would then be looked after by those having charge of the discipline, and count against the standing of the student who would be marked according to his attention to or neglect of duty.

1891.

After the burning of the first botanical laboratory, in 1890, the department was permitted to be the first occupant of the new first Agricultural

*See index: Davenport Plats.



Green houses and dwelling. Built 1892 by Mr. Burnham.

Laboratory, which in that day of small things was considered fine. The professor of botany, now twenty years in the College, refers to the attendance of Yoshida, a resident graduate to study botany, advised to come here by a former able Japanese, Professor Kizo Tamari, a graduate student of botany, mostly studying fungi, who since has become the president of an agricultural college in his native country. Six persons, mostly instructors at the College, were students in botany during the long winter vacation.

Professor Carpenter is giving much time to the supply of good water, care of buildings, and also plans for heating.

Professor Durand, in charge of the mechanical department, is giving much attention to installing a system of lighting the shops and other college buildings. The library building caught fire in two places on account of imperfect wiring. There is great need of a foundry, and more room and equipment, if we expect to keep pace with first class institutions.

The florist, Louis Knapper, reports the attractions of greenhouses and flower grounds, and calls attention to the exhibit of greenhouse plants at the state fair.

The librarian, Jane S. Sinclair, reports addition to the library and improvements by way of making card catalogues; she comments on the absence of a work-room much needed—never yet (1913) provided, because an influential man at the College would not hear to the request of Professor MacEwan—then having the library in charge, in addition to his teaching of English.

The College is growing; the annual report contains statements from the president, secretary, professors of agriculture, horticulture, chemistry, zoölogy and entomology, botany and forestry, mathematics and engineering, veterinary, engineering, military, physics, drawing, history and political economy, the florist and the librarian.

To keep within reasonable bounds, the writer is obliged to exercise more and more care in selecting items for the history of the College, scarcely referring to the experiments and bulletins, and farmer's institutes which are doing so much for the people of the state. Sixty-nine numbered bulletins have now been printed, not to include the numerous reports of experiments previously made.

Think, too, of the volumes swelling with valuable reports of farmers' institutes!

Dr. Beal, about 1875, had planted many trees on the campus, usually putting them in thick for immediate effect with the view of thinning out gradually as the trees crowded. None too soon and none too thoroughly did Professor Taft attend to the thinning. He added a few new kinds of trees and, like Professor Bailey, added a considerable number of shrubs, much needed, but, like every new accession to care for the department, his plans were unlike those of his predecessor, and many of the groups of shrubs were taken up and set elsewhere, usually with some losses, again demonstrating the great expense and check in the progress of that kind of work at the College sure to follow a change of management. In 1891, Professor Taft as well as Professor Davenport spent some time in visiting colleges, inspecting greenhouses, a good plan for every new man, but again it takes time and is a temporary loss, especially noticeable if the new incumbent retains his place for only two or three years.

Dr. Kedzie well observes, "The first duty of the teacher is in his classroom (field or garden). To hold students to thorough work, to inspire en-

thusiasm in their studies, to induce scholarly habits and good principles, and thus fit them for life's work are the chief duties of a teacher. No kind or amount of outside work, however much it may attract public attention, can compensate for neglected classes and slighted work." In closing he says of chemistry at the College, as can be said as truly of several other departments, "The chemical department has also served as a bureau of information to the public on a great variety of subjects, involving a good deal of work."

Professor Cook was always a tremendous worker, inspiring great en-



Barn for the Experiment Station.

thusiasm among his students, and the work was right in line with what farmers needed. His department was surely a bureau of information.

During the long winter vacation, the writer spent six weeks at Harvard studying their grasses, preparatory to his second volume of Grasses of North America. There is published in the report of the Board for this year Michigan Flora, prepared by W. J. Beal and C. F. Wheeler, consisting of 170 pages with a full index. It includes a list of plants and notes pertaining to them. There is also much other matter of a miscellaneous character in the pamphlet, which has been very highly complimented by a large number of botanists.

Under the guidance of Professor Durand, the mechanical department, now called the engineering division, was in a prosperous condition and

well established for doing a valuable and needed work among such youth of the state as wish training in mechanical pursuits.

THE YEAR 1892.

In 1892, at the timely suggestion of President Clute, a considerable number of the professors report their methods of teaching, which is found in a portion of this volume.

Discussion is going on regarding the introduction of special short courses, sure to come in a few years. Considering the great improvement in the courses of Michigan schools, the president thinks it high time this College raise its requirements for admission; he also thinks it time this College should have a well equipped dairy school. These valuable suggestions show that President Clute is alert for the growth of the institution.

Mrs. Stanley Potter of South Haven is busily engaged in preparing a large collection of wax models of fruits and vegetables to be exhibited in Chicago next year, with the understanding that the specimens shall return to the College for future care and keeping.

Professor Durand drops his work in the mechanical department and goes to Cornell University; he is succeeded by Professor L. P. Breckenridge, another most competent man.

During the year 1892 the botanic garden is nearly doubled in area, in all now consisting of three acres. A large portion of the notes from Dr. Beal's report appears elsewhere under "Methods of Teaching." A very full report is made this year of the lengthy ceremony in laying the "corner stone" of the second botanical laboratory placed in laboratory row.

Dr. Edwards emphasizes the importance of a thorough course in the study of the English language at this College:

"To sum up the matter, then, English study is of value because it underlies and makes possible the acquisition of all other knowledge; because it tends to preserve the language in a state of greatest effectiveness; because it enables a man to have greater and wider influence with his fellow men; because it cultivates simplicity, clearness, accuracy, consecutiveness of thought; because it improves in a new and important direction the observation and the judgment; because it forms the character."

In his report Professor Vedder covers six pages on the utility and educational value of mathematics, quoting eminent men in confirmation of his views.

Professor E. A. Lewis speaks well of the educational value of military science and tactics, while Professor Holdsworth makes clear his correct methods of teaching drawing. We should expect nothing short of this, as he was well trained for four years at this College. The same is true of Professor Woodworth, another man who has been impressed in correct methods by four years of study at M. A. C.

President Clute resigns, August 30, in poor health, and at once accepts the presidency of Florida Agricultural College.



FACULTY 1890.

Kedzie, Durand, Davenport, Carpenter, Grange, Simpson, President Clute, Taft, Beal, E. P. Anderson,
Cook, Reynolds.

CHAPTER VII.

PRESIDENT GORTON'S ADMINISTRATION.

1893-1895.

When Oscar Clute resigned the presidency of the College on August 30, 1893, in poor health, and accepted the presidency of the Florida Agricultural College, Lewis G. Gorton was selected to take his place. President Gorton was 33 years old at the time, had been graduated from the Chelsea high



LEWIS G. GORTON.

school and from the state normal at Ypsilanti and had taught for some years in various schools and at the Michigan Military Academy at Orchard Lake. At the time he was chosen president of the College he had been principal of the Bishop school, Detroit, for seven years. He was a tall, powerfully built man. He had had no experience in college work; no knowledge of agricultural education and soon found his task a heavy one.

The year 1893 was distinguished for numerous marked changes in the faculty. Not only was there a change in the presidency, but P. M. Harwood, Professor of Agriculture, resigned August 20th, and was succeeded by Professor Clinton D. Smith; Professor Breckenridge departed for the University of

Illinois and was succeeded by C. L. Weil as head of the engineering department; Professor A. J. Cook, after a connection with the College as student, teacher and professor for thirty-six years, left for California, Professor W. B. Barrows taking his place; Assistant Professor N. D. Corbin dropped history and political economy, James N. McBride assuming control for one year, when W. O. Hedrick took up the work.

Five important places were thus vacated and filled by new men, where there were only thirteen professorships—changes too numerous and important for anything like stability of management. On account of these changes, the College dropped back again.

But in spite of changes the two years of President Gorton's service were years of much activity in all branches of the college work. In 1893, the College made a fine exhibit at the World's Columbian Exposition at Chicago.

Largely through the initiative of Mr. Chamberlain of the State Board,



First boiler house built 1894.

some 40,000 feet of artificial walk was laid, a great improvement long much needed; a foundry was built at the shops; a portion of the gallery was built in the library; a small hospital was begun. Professor Taft directed the rebuilding of the dam in Cedar river and the preparation of a card index of the trees in the orchards. The botanical department, after three years without a home, was at last installed in the new laboratory; Professor Vedder prepared a small map of the grounds and farm.

An important feature of the year was the publication by Professor A. J. Cook of bulletin No. 94, entitled *Birds of Michigan*, illustrated, and occupying 264 pages in the report of the secretary of the State Board of Agriculture.

Perhaps the most important single event of President Gorton's administration was the beginning of the short-course movement, long advocated, but not till then realized. This was due largely to the energy of Professor Clinton D. Smith. He fitted up a small room in the basement of the agricultural laboratory and here in 1894 the first short-course classes of twenty-seven students were held for six weeks in January and February.

The same year also saw the beginning of the laboratory work in dairying—and none too soon.

During 1894 Professor Weil directed many changes and improvements in the woodshop and blacksmith shop. The professor of botany gave much time to the preparation of a general catalogue of all persons ever connected with the College, and this work was kept going until published in June, 1900; the State Academy of Science was organized at the university with W. J. Beal the first president; Professor Vedder added sewers and drains in a number of places and recorded maps of these lines for future reference. The superintendent of the farm reported the arrival and extension upon the farm of numerous weeds, and great numbers of experiments were conducted with a varying degree of thoroughness and value.

The year 1895 is memorable for the fact that no professors resigned nor were any elected; several assistants and instructors resigned and others were selected to take their places.

During this year there was published a neat and accurate map of the botanic garden drawn by B. O. Longyear, including a list of the plants it contained. This was the second time that a map had been prepared and a list printed; the professor of botany added largely to the herbarium which in that year contained 54,000 specimens.

During the year a temporary lighting system for the campus was completed by Professor Woodworth. Dr. Edwards reported that his department of English was hampered by the gradual crowding of the course through the insertion here and there of additional work in other departments.

In 1895 the College had to meet another change in its presidency. For some time President Gorton's usefulness to the College had been diminishing and in December that year his resignation was demanded by the Board.

The chairman of the Board, Hon. C. J. Monroe, reported: "We have carefully weighed and added together the numerous things which have come to us, through personal observation and other trustworthy channels, and believe their sum forms ample grounds to warrant our action in asking his resignation."

The *Grange Visitor*, Kenyon L. Butterfield, editor, had this to say of President Gorton's resignation in the issue of Dec. 5, 1895:

"The difficulty regarding President Gorton at the Agricultural College seems to have been one of misplaced judgment. We have nothing personal against Mr. Gorton, but in our opinion he was not at all fitted for the position of president of the College, the protestations of several city newspapers to the contrary notwithstanding. The chief blame that can be attached to the action of the Board of Agriculture consists: 1st, in ever having chosen President Gorton; 2d, in not dismissing him a year and a half ago when they must have known that he was not the man needed; 3d, a mistake in policy in not putting before the public a few cogent reasons why he has not given satisfaction. It is probable that the members of the Board themselves see and own their mistakes. But all this talk about 'autocracy and desire on the part of a few of the faculty to become president,' and that sort of thing, is the sheerest nonsense."

It was surprising but gratifying to the friends of the College to know that these troubles did not cause a decrease in the number of students, though doubtless they did prevent a rapid increase.

CHAPTER VIII.

PRESIDENT SNYDER'S ADMINISTRATION.

1896—.

Since the administration of President Willits, Clute and Gorton had each been of short duration, the Board of Agriculture sought a young man who should prove well adapted to the position and who should serve the college for many years. Their choice finally fell upon Jonathan LeMoyne Snyder who was elected president of the college at the Board meeting held in Grand



JONATHAN L. SNYDER.

Rapids, February 11, 1896, and assumed the duties of the office in April. He was at that time thirty-seven years old.

He completed a graduate course at Westminster College in 1891 and received the degree of Ph. D. In 1908 Michigan University bestowed upon him the degree of LL. D.

During the administrations of Presidents Abbot, Willits and Clute, faculty meetings had been held once a week and cases of discipline attended to by the entire faculty, but in 1897 under the new administration, this policy was abandoned and meetings held only on the first Monday of each month,

except that special meetings sometimes became frequent and of long continuance.

Consent of the faculty was obtained to leave cases of discipline to be decided by a special committee for each case appointed by the president, a plan which saved much time to most members of the faculty and worked well.

Another change introduced by President Snyder which met with approval was the calling together, about once a month, of all the teachers of freshmen, sophomores and juniors that they might compare notes on the quality of work done by each student especially students of low grade.

President Snyder chronicles further changes in the policy of the institution in his first report, June 30, 1897:

"Soon after taking charge of the College three very important and somewhat radical changes were made in the policy of the institution, namely: the long vacation was changed from the winter to the summer months. A course for young women was outlined and adopted and Abbot Hall set apart for their exclusive use; it was decided to offer four special six-week courses during the winter. These changes had been under consideration for several years and seemed to meet the approval of the faculty, as well as many influential citizens of the state."

The change of the long vacation from winter to summer was an important one. Of this Professor C. D. Smith said in the 1897 report:

"For the first time the long vacation has been moved from the winter to the summer, and I have to report the effect of the change on the work of this department. By reason of this change this report will cover the work of four terms, namely, the closing term of the college year ending in August, 1896, as well as the three terms of the present college year.

"The change of the long vacation from winter to summer renders it difficult for members of the faculty to attend the institutes without neglecting the class work. On the other hand, to keep in touch with the lives and experience of practical farmers it is absolutely necessary that those teachers that have to do with the instruction in practical farm work should attend these meetings and become acquainted with the thought of the people."

One of the chief events of the year 1897, following President Snyder's arrival was the celebration, June 17, of the anniversary exercises commemorating the 40th year of the College.

In order to give as clear an idea as may be of President Snyder's administration, the chief events are reported from year to year:

In 1898, after trying for two years the plan of having the long vacation in summer and of admitting women, to take the course in home economics established for them, President Snyder reported that the judgment of the State Board had been vindicated in introducing these two changes.

The legislature granted \$5,000.00 for installing electric lights at the College, an amount by no means sufficient to equip a plant for that purpose. As a makeshift, a dynamo was purchased and a contract made with A. A. Piatt of Lansing to conduct light and a limited amount of power from his dam on Grand river, five miles distant.

This year the street car line was extended to the new terminal on the campus. The cars reached the College on the installment plan; for a time the track stopped on Michigan avenue at the city limits, later it went to the "big stone" and turned into the race track; about 1895 it was extended to the west entrance of the College; April 15, 1896, a committee of the faculty, in accordance with recommendations of the Board, urged the company to

extend the track to the hospital, but not to enter the campus owing to a strong objection of one member of the State Board. Finally in 1898, the cars landed people on the campus, where the college built a small waiting room, after a while wires were strung over the track, May-pole style, to permit cars to turn about conveniently.

The first series of excursions by railroad was inaugurated through the efforts of K. L. Butterfield, all trains landing visitors near the boiler house on the spur of road controlled by the owners of the Pere Marquette Railroad. The results were very gratifying and similar excursions during August were continued every year, closing in 1911, when, for some reason, the railroads were not willing to continue excursions to the College.

Mr. Butterfield also devised other schemes for advertising the College; by distributing 5,000 college calendars, 10,000 copies of a college almanac or year book, 18,000 catalogues, thousands of copies of circulars and many special editions of the M. A. C. Record; by advertising in papers and magazines, agricultural, religious, educational; by sending personal letters to a certain select number of persons. Select lists of families containing children of college age were obtained by several devices; quantities of "documents" were placed on the tables where farmer's institutes were held. These efforts had the desired effect in the advent of more students. The number of students this year was close to 500. The number of books in the Library was 25,600.

Dr. Beal called attention to what the College had done toward a botanical survey; in publishing a list of plants of the state, a list of honey plants, a list of trees and shrubs adapted for use about a home, and lists of weeds, native and imported and in making observations and for collecting specimens.

Prof. W. O. Hedrick was absent six months in Europe studying conditions in England and Germany.

The reader must not forget that the work of the experiment station was broadening, growing in interest and importance.

K. L. Butterfield, Superintendent of Farmers' Institutes, reported: "From whatever standpoint we view the subject, the past season, 1897-98, of institute work is by far the most successful ever held in Michigan" notwithstanding the appropriation by the legislature was only \$5,500. On August 18, "A Farmers' Day was held at Bay View" giving good satisfaction.

The results of the Round-up-Institute held at the College were beyond our anticipations. "Never before in the history of Michigan has there been so large a body of representative farmers sitting for the same length of time and discussing such a variety of practical topics bearing on the industry of agriculture."

For 1899 the reports of president and professors were unusually short, perhaps for the reason that those of the previous year were unusually full.

The president reports the legislature very generous, granting \$134,000, mostly for buildings. In some states this amount of money would be considered small.

The growing of sugar beets in Michigan is attracting a good deal of attention.

While Professor A. J. Cook was a professor of this College, apiculture received much attention, but since his departure the interest had lagged and had been fluctuating. J. W. Rankin, apiarist at this time made a report in which he stated: "The lesson learned this year was that bees will winter successfully only in a perfect cellar, and if such a cellar is not available, they should be wintered out of doors."

In his report for the year closing June 30, 1900, President Snyder spoke of the increase of students—about one hundred more this year than the preceding—total 627. This year there was a triennial meeting of the alumni on June 14. The improvements reported were many, including a building for women, and a dairy building.

Herbert W. Mumford, '91, was appointed Professor of Agriculture and Superintendent of the College farm, Professor C. D. Smith remaining Director of the Experiment Station and adding Superintendent of Farmers' Institutes, College Extension Lecturer and Dean of the Special Courses. June 1, 1899, U. P. Hedrick, '93, was elected Professor of Horticulture and Landscape Gardening and Superintendent of the grounds. The position of Professor L. R. Taft was changed to that of Superintendent of Farmers' Institutes and State Inspector of orchards and nurseries, beginning July 1, 1902. No man ever at the College was called on so often to speak in different portions of the state as Professor C. D. Smith, especially concerning the dairy and sugar beets.

During the year closing June 30, 1901, the woman's building was completed. President Snyder planned an elaborate program for the dedication on October 25, calling out the state federation of women's clubs, members of the grange and farmers' clubs. The lectures given were varied, appropriate and most interesting, closing with a banquet and toasts. (See Woman's Building. See also Dairy Building which was ready this year.)

A college hospital containing seven rooms and two bath rooms was built in 1894 at a cost of about \$3,500. This hospital, until the beginning of 1900 was occupied by different persons, sometimes college employes, who were expected to take care of students when ill. At no time was the service altogether satisfactory. In 1900 Miss Rowena Ketchum, a trained nurse, was employed and placed in charge, where she still remains, (1913), giving excellent satisfaction.

The State Board and faculty were much gratified with the act of the legislature granting the College a permanent income of 1-10 of a mill on the taxes collected for the state. (See Endowment). Much credit was due Hon. B. A. Nevins, '74, for his energy in securing the passage of the bill. The state board of health, the live stock commission and the State Board of Agriculture united and urged that the Agricultural College should crowd the work of investigating contagious diseases of animals begun in 1897. For this work, C. E. Marshall was put in charge of bacteriology and hygiene.

H. W. Mumford, Professor of Agriculture, urged that plans be made for giving more attention to dairying and farm crops, two subjects of great importance long neglected at this College.

The Professor of Horticulture, L. R. Taft, impressed with the age, large size and crowded condition of trees on the campus, in places took out many specimens to save other trees and open up fine views on the campus.

Dr. Kedzie laid stress on plans for training some students who wished to prepare themselves for chemical work in connection with the beet-sugar industry of our state.

Dr. Beal mentioned the importance and care of two and two-tenths acres of white pine at the east extremity of the farm planted in 1896. He published a second list of the trees and shrubs growing on the campus for use of students in botany, forestry and landscape gardening.

Dr. Edwards called attention to the great amount of time required of him in editing the M. A. C. Record striving to make it newsy, bright and suggestive.

Miss Maud R. Keller referred to moving into the new woman's building as one of the most important events of the year and one full of promise.

During the year closing June 30, 1902, at the earnest request of the Director of Physical Culture, G. E. Denman, the Board authorized a bath house adjoining the armory and began work on the athletic field across the river. (See Athletics).

A fifth year was prefixed to the course of study which students of the eighth grade could enter; graduates of approved high schools were admitted to the freshman class without examination, on the same terms as those on which they were admitted to the university.

The total attendance on the average had been increasing each year—this year it was 689.

At the fat stock show at Chicago in 1901, M. A. C. distinguished herself both in the student contests and in the show of stock, taking three firsts, two seconds and three third prizes for live stock, one of which was the grand championship for dressed carcasses taken by Elm Park Lad, a registered Aberdeen Angus steer shown against forty-nine competitors.

Professor Barrows referred to an act of great merit, viz: a case of insects accompanied by a descriptive pamphlet presented to each high school in the state, about one hundred in number. Each collection contained about seventy-five specimens of the more common and interesting insects of the state clearly labeled. These collections were enthusiastically received by the schools. (See Extension Work).

The reports for the year closing June 30, 1903, refer to important changes in the faculty, Robert S. Shaw becoming professor of agriculture in place of H. W. Mumford, who went to Illinois University for a much higher salary; Assistant Professor George Humphrey becoming professor of animal industry in Wisconsin University. Dr. R. C. Kedzie died the 7th of November and was succeeded by his son, Frank S.; C. F. Wheeler, after ten years as assistant professor of botany, joined the U. S. Department of Agriculture to identify plants; Prof. E. E. Bogue became professor of forestry; J. A. Jeffery became professor of soil physics. Students increased this year, in all numbering 854.

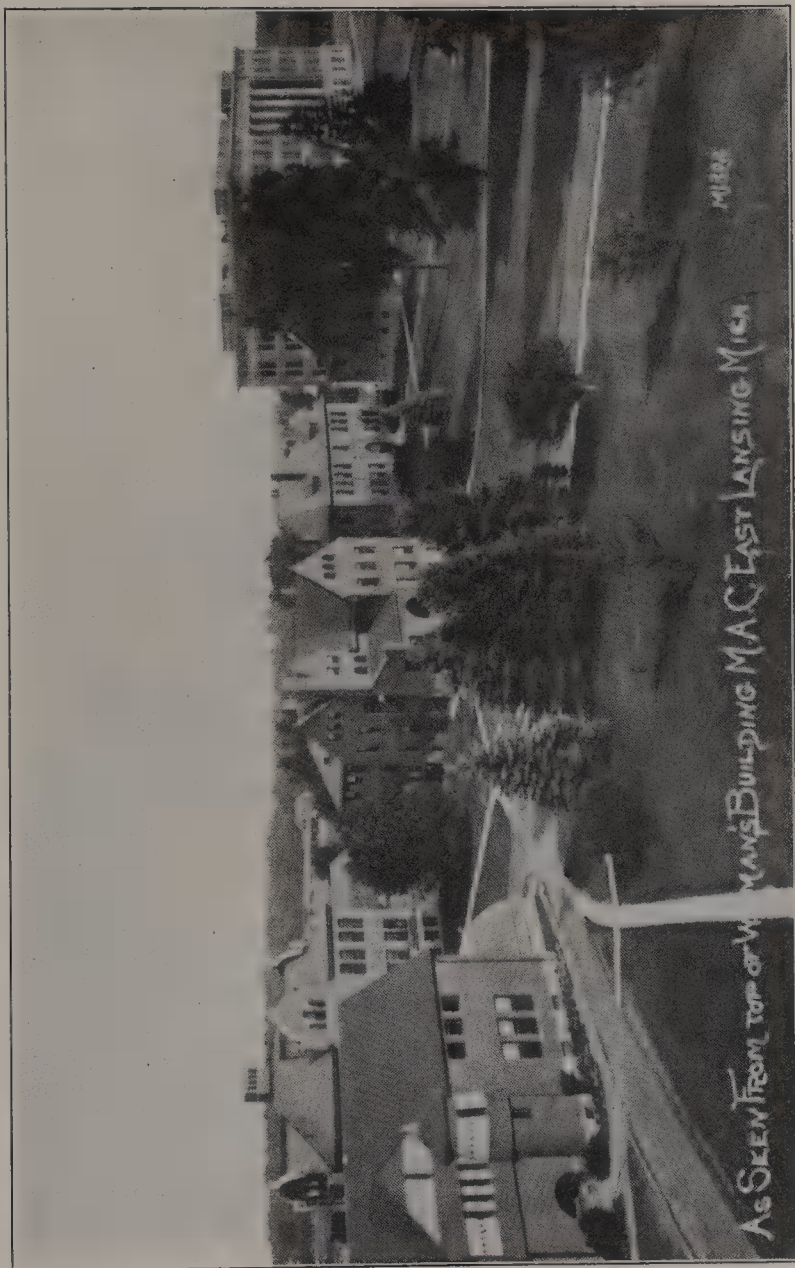
U. P. Hedrick was active during his first year as professor of horticulture, repairing and changing the horticultural laboratory, planting trees and shrubs about new buildings, tearing down the vegetable house built to decide which is preferable for heating, steam or hot water; bracing up the steep river bank near the President's house and organizing a horticultural club. Dr. Marshall moved into the spacious new bacteriological laboratory. By enlarging the sections and shortening the periods, the botanical department continued to get along with the same teaching force, omitting plant physiology for want of a suitable room.

In forestry, Professor Bogue was active in starting a large nursery and planting the cut-over wood lots, making much use of locust trees. Professor Barrows was active in preparing an account of the birds of Michigan. As the trees grew, more birds were yearly nesting on the campus. Major C. A. Vernou continued to call attention to the unfortunate hour for military drill, 5 to 6 P. M.; Professor Taft mentioned the rapid extension of the San Jose scale and prescribed spraying with arsenate of lead when the leaves have dropped.

In the year closing June 30, 1904, the number of students reached 917, and this notwithstanding the fact that some timid souls had feared the

number would drop if the requirements for entering college were raised to equal those of the university.

It was also gratifying to notice that students with better preparation made better progress at the College and having taken time to prepare for the



Laboratories: Horticultural, Bacteriological, Botanical, Forestry, Entomological, Agricultural.

work, a smaller per cent of them gave up and dropped out. With the advent of more students, there was an increasing clamor for more teachers and more class rooms and for more money to meet these demands. It was becoming the rule to require some classes to attend laboratories during Saturday forenoons.

With the more thorough preparation for entering, it was found that a

fifteen year old boy or girl was too young to undertake college work as a freshman, though Harvard many years before had graduated students at that age.

For the first time the students and faculty subscribed the money for and employed a secretary to take the lead of the work of the Y. M. C. A.

This year the death of Hon. Franklin Wells should be mentioned, since he served as a member of the Board of Agriculture for thirty years, during most of this time as president.

Professor Shaw gave close attention to making improvements in the various kinds of live stock, not including horses, goats, hens, and bees. The stands of corn in three fields attested the importance of rational modern methods in saving seed corn.

A small model, iron-frame greenhouse was put on the south side of the horticultural laboratory chiefly for work in plant breeding. Picnics continued to increase in number, Sunday schools claiming that they have just as much right to come as the farmers.

Another edition of the Michigan Flora, prepared by Dr. Beal, was printed in the proceedings of the State Academy of Science and the State Board took 2,000 extra copies, for distribution to students and others. Popular bulletins were prepared for the use of reading courses, called for by granges of the state; the professor of botany preparing two on grasses, the professor of agronomy preparing two on farm crops.

The following note is from the M. A. C. Record of May 24, 1904:

"On Thursday evening the M. A. C. chorus, Miss Louise Freyhofer, director, presented Haydn's Oratorio, 'The Creation,' to a large, interested and appreciative audience. In undertaking this work the chorus found itself confronted by artistic and financial difficulties, but before the evening was over, both problems were solved satisfactorily. Certainly the organization deserves great credit for affording such an opportunity, which comes but too rarely to Lansing and college people.

"But after all is said, the one deserving of most credit and most praise is the director, Miss Freyhofer, on whom has rested all the responsibility and who has been able to keep together, for the past eight months, a chorus of seventy-five comparatively untrained voices,—a task by no means easy."

The Dean of the Women's Department, Miss Maude Gilchrist, was appointed expert in charge of household economics at the Louisiana Purchase Exposition. The botanical department made a fine exhibit of grasses and grains.

Dr. C. E. Marshall made an extended report of his work in bacteriology and hygiene, including details of instructions given and descriptions and illustrations of the new laboratory and some of the apparatus,—much attention was given to bacteria of the dairy and the soil.

In view of the fact that during the year serious effort had been made to diminish the time devoted to English, Dr. Edwards took the opportunity to discuss at length the relation of English work to the curriculum of our College.

Professor H. K. Vedder was emphatic in his report urging the need of more rooms for the many classes in mathematics and engineering; the report of the Chemist, Prof. F. S. Kedzie continued in much the same strain and the professor of botany might well have done likewise. "So say we all of us."

C. D. Smith, dean of the special courses, was gratified with the growing interest and the increasing attendance from year to year, the number attending being 166. He suggested the propriety of offering a much longer course

of study, beginning late in October, students to go home at Christmas for a week and then return to remain for most of January, February and March. On looking forward to the fall of 1913, the reader will see that this suggestion was then adopted. The six weeks' course was too short. Our short courses were showing a marked effect on the quality of butter and cheese produced in the state.



Boiler house for steam heating and electricity. Chimney 125 feet high.

The mailing list for bulletins now approached 40,000 names. The reader is again reminded of the growth and extent of experiments pertaining to agriculture.

The reports for 1905 show the attendance steadily on the increase, this year passing the one-thousand mark. The new water system cost about \$9,000. On February 11, Wells Hall was destroyed by fire, the fire probably catching through the carelessness of some member of a society having rooms in the building.

Some of the cut-over forest has been restocked with white ash. Fifteen courses are now offered in horticulture.

The cold-storage building was this year remodeled and the Cooper system installed, now working well.

The report of the condition of the botanic garden was this year unusually full of quotations of the comments made by visitors.

An artesian well was drilled 177 feet deep by Packard and Edgerton, to furnish water for the botanic garden. It did good service for a time but in later years gradually failed.

Compliments flowed in for the efficiency of Miss Ketchum in care of the hospital.

For many years past students at the College had won victories too numerous to record here in athletics, in oratory, in judging live stock and corn, in judging fruits and flowers, and in shearing sheep. I mention one example.

Mr. E. S. Bartlett, a freshman in the five-year agricultural course, won the 125 dollars trophy offered in the sheep-shearing contest, college class, at the St. Louis Exposition on October 13, 1904.

The cup was won easily in four minutes and eighteen seconds. It was not a speed contest only, there being six conditions to be observed, as follows: 1, speed; 2, skillful manner of handling both the machine and the sheep; 3, the appearance of the sheep after shearing; 4, the condition of the fleece; 5, the number of cuts in the wool; 6, the cuts or scratches on the body of the sheep.

Mr. Bartlett was also entered in the "free for all" with five professional competitors. In this class he won fourth place, shearing his sheep in three minutes and two seconds.

During the year closing June 30, 1906, farmers' institutes were becoming more and more popular, this year 73 two-day institutes were held and 200 one-day institutes; the appropriation of \$7,500 was not sufficient to pay for holding all that were asked for.

For making experiments, the State of Michigan had for some years supplemented the funds received from the general government, to the extent of about \$9,000 annually. The northern peninsula and South Haven sub-stations were being supported entirely by the College. The expense of publishing the station bulletin is annually about \$4,000 and is borne by the College.

A popular addition to extension work was begun this year in the form of "railroad institutes," which were held during the month of April in co-operation with the Lake Shore & Michigan Southern and the Michigan Central railroads, thirty being held upon the former line and seventeen upon the latter. Each road furnished a special train consisting of two passenger coaches and one baggage car, stopping from one hour to an hour and a quarter at each meeting. (See the chapter on Extension work).

President Snyder referred to the shortage in the supply of competent men and women to lecture at institutes since the number of conventions had become so large. He referred again to the pressing need of several buildings always sure to follow an increase in the number of students.

Dr. Beal, in '05, was authorized to visit four botanic gardens for the purpose of studying plants and methods of management, also to secure by exchange, desirable specimens not now in our garden. The herbarium had been steadily growing for many years and at this time, contained a total of 102,000 specimens—by far the best herbarium in Michigan.

The professor of horticulture (Fletcher) introduced a change in the method

of instruction by giving each student during his attendance a plat of ground on which he should plant and tend a typical home garden. So far as it goes this is worth while, but the long summer vacation and the shifting of students in the fall term sadly interferes with the completion of this plan. In the frequent changes of the teaching force, if every new man had the experience



Some of the farm buildings.

and knew what his predecessors had accomplished, how valuable it would be to students and the reputation of the College! He called attention to the need of greenhouses with benches to accommodate more students who apply for work.

Instruction for short course students was becoming steadily more popular, this year plans having been made to give a second and more advanced course.

C. L. Brewer, Director of Physical Culture, suggested that all students, at least for a portion of their attendance at college, be required to take work in gymnasium or its equivalent, since a large majority of the physically weak who need the work most, do not elect to take any athletics. If a well equipped gymnasium were available this want could be more easily met.

W. O. Hedrick, Professor of History and Economics, reported somewhat at length on the different methods employed by teachers of such subjects and discussed the question as to whether to set students to learning a text-book or to teach them to gather much of this information from original sources. The subject of political science, he believed, should not be taught after the modern method of teaching botany and zoology, which is passing from the part to the whole, but rather by the reverse method.



Horse barn.

R. S. Shaw, Professor of Agriculture, during the year showed his skill, and probably took great delight, in shifting the old barns to new sites, repairing them and building new ones, clearing the way for the great fire-proof agricultural laboratory.

In 1906 the College installed an automatic telephone system of its own connected with the Citizens' telephone of Lansing. It was in August, 1881, that the College had been first connected with Lansing by telephone, with two instruments, one in the office of the secretary and one in the steward's rooms.

The new system, which also has a fire alarm arrangement, has proved very convenient and a saving of much time to all persons in the circuit. In 1913, the College operated, in various offices, 180 telephones, all connecting with the Citizens' telephone of Lansing.

In 1906 a stone road fifteen feet wide was constructed extending from the city limits to the township line. Of the total cost of \$12,800 the College paid twenty per cent, the state paid \$1,000 per mile and the rest was paid by subscription. The distance is a few feet over two miles. In later years, the road became very defective for want of proper construction and care.

President Snyder, in his report for 1906, says: "The opinion of the faculty is practically unanimous that this College should retain in its courses certain general culture studies, such as English, history, political economy, etc. It does not look with favor upon the free elective system adopted by some distinguished agricultural schools, which makes it possible for a student to gain the bachelor's degree without mathematics beyond the rudiments of arithmetic, or without pursuing even to a limited extent those culture studies



PRESIDENT ROOSEVELT.

which give to the student a degree of ease in expressing his own thoughts, and a fair appreciation of the great fields of knowledge that lie outside his own narrow profession."

A few seniors in home economics were given one term in household dairying.

During the state fairs, arrangements were made by the College and by the state grange to give lectures and demonstrations on certain topics, sometimes in tents surrounded by crowds of people called together by auctioneers. The results have not been very satisfactory, the people in attendance preferring to wander about from place to place for amusement and for picking up an occasional hint on something new.

The eleventh annual report of institutes, an edition of 9,000 volumes, was published.

The great event of the year closing June 30, 1907, was the celebration of the semi-centennial of the existence of the College. May 13th, the actual

anniversary of the dedication was too early in the season for the comfort of those in attendance and it seemed better to choose a date nearer commencement.

From Wednesday, the 29th to Friday, the 31st, the program of the meetings included the following: the College and the State; the Builders of the College; Mendelssohn's Oratorio, Elijah; American Association of Agricultural Colleges; American Association of Experiment Stations; Society for the Promotion of Agricultural Science; the alumni day of the College; National Memorial Day; evening parade and jubilee; exercises by students; congratulatory address; commencement exercises; address of the President of the United States, Theodore Roosevelt; conferring of degrees; society banquets.

After the college year had been changed to bring the long vacation in sum-



Barns and silos for beef cattle.

mer, the work on the farm, in the departments of horticulture, botany and entomology, was not so satisfactory for students as it was when the long vacation came in the winter. Professor S. W. Fletcher in his report for 1907 suggested that the only really satisfactory solution of the problem was to require horticultural students to stay at the college for a summer session of six to eight weeks during at least one of the summer vacations. This plan was begun in the summer of 1911, by the agricultural department.

The greenhouse, the second one built at the College, erected on a knoll south and east of the botanic garden was designed for serving the purpose of aiding botany as well as horticulture, as Dr. Beal at that time was occupying two chairs. Gradually since that time the use of the house has drifted more and more to that of horticulture. Professor Fletcher thought the greenhouses should be used for purposes of instruction and investigation

rather than for display to entertain visitors. The professor wished to have every horticultural student assigned to a strip or greenhouse bench or bed on which he would be expected to grow certain crops and make certain experiments the last two years of his course.

Most of the states with a large population were supplementing the \$30,000 given by the United States government for conducting experiments by the addition of a varying amount up to \$100,000 or more a year. This year Michigan added about \$40,000. The writer is perpetually tempted to run over the line and say something concerning experiments at the College, noting topics like these: studying remedies for hog epidemics; the role of bacteria in the



Hospital for diseased animals.

soil; new strains of alfalfa in Michigan; experiments in growing corn showing that the appearance of the ear saved for seed often has little to do with the yield secured.

For this year closing June 30, 1908, the writer calls attention to a few items in the reports. The celebration the year before of the semi-centennial, began to show results in the form of first-class advertising.

During the week of commencement, this year, Dr. R. C. Carpenter, '73, Professor of Experimental Engineering, Cornell University, gave the dedicatory address on the completion of the new engineering building.

Two deaths. Professor Bogue and Professor Holdsworth and two resigna-

tions, Director C. D. Smith and Dr. S. W. Fletcher, took four out of twenty, one-fifth of the teaching members from the faculty.

Walter Hiram French was this year placed at the head of the new department of agricultural education. For six years he had been the very efficient deputy superintendent of public instruction and had become well acquainted with public schools and their needs throughout the state.

Assistant Professor Halligan of the horticultural department referred to a very undesirable condition of things on our beautiful campus then becoming more and more apparent each year, viz., the old lawns were rapidly becoming thin and infested with unsightly weeds. See the topic Campus.

In 1908 an important change was made in the method of selecting members of the Board of Agriculture. Instead of the governor, with the consent of the senate, appointing the members, the new constitution, ratified in 1908, provided that "There shall be elected on the first Monday in April, nineteen hundred nine, a state board of agriculture to consist of six members, two of



Slaughter house.

whom shall hold office for two years, two for four years and two for six years. At every regular biennial spring election thereafter, there shall be elected two members whose term of office shall be six years. The members thus elected and their successors in office shall be a body corporate to be known as 'The State Board of Agriculture.' "

By some oversight or deception by state officers, the state treasury in 1908-1909 was "overdrawn" because the assessments for taxes were made too small. For this reason the Agricultural College asked for no appropriations, relying for support on the mill tax and appropriations from the federal government.

An addition to the botanical laboratory was made costing \$12,000, while the original building cost only \$10,000. Owing to the crowding of the dairy building on the south and the bacteriology laboratory on the north, the addition cut off much of the light, nearly spoiling one of the rooms in the main building. The addition furnished five rooms and cut off one, thus increasing rooms by four.

President Snyder enumerated a large number of pressing wants. Especially had the buildings failed to provide suitable conveniences for the in-

creased number of students—a wail that the reader has become accustomed to not only from the president but from the members of the faculty all along the line in the reports of the heads of all departments, not only for a single year but usually for many years.

The Dean of Agriculture referred with pride to the work of W. F. Raven in organizing stock breeders' associations among the dairymen of the state; to the increased number of students in the short courses; to the experimental union among over 200 farmers for testing grains, etc., under instruction. He went into details regarding the newly established departments of the agricultural division. They were as follows:



Manure shed.

- a. Department of Dairy Husbandry.
- b. Department of Animal Husbandry.
 - 1. Beef Cattle.
 - 2. Farm Horses.
 - 3. Sheep.
 - 4. Swine.
- c. Department of Poultry.
- d. Department of Soils.
- e. Department of Farm Mechanics.

A little later Dean Shaw may have felt chagrined when three leaders out of five in his departments left him for places where the salary was higher, and these departments began again to climb from the bottom of the ladder.

Professor Eustace, head of the horticultural department, urged work in fundamentals of the science and art in place of attempts to popularize hor-

ticulture. He may well be gratified with the success of O. K. White in extension work, who spent most of his time going about the state from place to place demonstrating horticultural practices. In 1913, Mr. White is still performing this kind of work.

The Professor of Botany, Dr. Beal, knew from an experience of ten years, the great value of a botanical museum with an economic bearing upon agriculture, but thought it might yet be a long time before there should come a man to the college, having a decided mission for such a task, without which there could be little done.

The reader may have noticed that previous to 1857, farmers thought a museum would most likely be gathered soon after founding the College.

Dr. Marshall expressed his gratification with the four new hospital cottages which are essential in successfully fighting contagious diseases. See "Buildings."

The dean of engineering reported a job that had been coming to hand



Bull barn.

almost annually—to find several instructors to take places of those who resigned for work elsewhere. He said, "I shall take opportunity in and out of season to press the subject of higher salaries and opportunities for study and research and plans for a gradual increase to accord with the time of service." He thought the course of study as then in operation "too severe for the average student" and recommended a further reduction to be followed up by better quality of work.

Professor V. T. Wilson referred to a new departure of holding an exhibition of drawing made by public schools at the time of the interscholastic meet in May. The exhibit proved very successful, some fifteen cities sending exhibits.

The report of Dr. W. O. Hedrick called attention to the teaching of a class in sociology for the first time. Economics, political science and sociology are studies that change so rapidly from year to year that teachers must continually read current books and magazines to keep up with the progress,

The professor of english and modern languages reported that with twelve teachers, the department had only three rooms and that consequently, additional rooms must be found wherever possible. "For this reason during the year we have been in every building on the campus containing recitation

rooms." In the department, the average enrollment of students for the year was 1,526. For teaching German and French, Dr. Blaisdell wished to purchase a language phone. The department had again been victorious in the debate with the State Normal College. He favored a plan by which students might have opportunities to make brief addresses before farmers' institutes, granges, farmers' clubs, thereby gaining practice and doing something for farming and engineering. In this connection, it is interesting to note that many times in former years, the writer took pains, much to the advantage of students and societies, to secure a place for students on the program of the grange and sometimes on that of the state or county horticultural societies.

On Decoration Day the entire corps of cadets proceeded to Detroit, taking part in the street parade. The splendid showing made by the cadets both in ranks and out of ranks was most gratifying to the commandant, Captain F. W. Fuger, and reflected credit on the College.

Gas was piped from Lansing in 1909, and soon introduced into some of the laboratories and dwellings on the campus and in other portions of the city of East Lansing.

THE DORMITORY SYSTEM.

In the year 1909 the question of dormitories versus private society houses came strongly to the front. For more than forty years following the founding of the College, it was necessary that buildings for students' rooms and board be furnished by the institution. When the neighborhood began to be more populous, the State Board voted to encourage students to seek lodging and board in the neighborhood with the view of gradually abandoning the dormitories on the campus, after the plan adopted by the University about 1850. But the rapid growth of the College brought many perplexing problems to the board of control.

Two societies built houses—one on the campus, which is used for social and literary purposes only—the other off the campus, which is used as a home for its members, providing living rooms and boarding facilities. It is in all respects a modern fraternity house.

The president of the College is quoted:

"At least three or four other societies are anxious to build houses of the latter type, either on or off the campus. In their favor the claim is made that at the majority of our large universities fraternity houses are very common, permitted and sanctioned by the board of control of these universities; and that modern student life demands that some students draw away from the student body and form fraternal communities where they may live apart from the masses in perhaps a freer way than the dormitory affords. It is claimed that this fraternal life is more pleasant, forms closer friendships and on the whole is commendable.

"On the other hand it is claimed that these fraternity houses add very much to the cost of living; that only young men of considerable means can afford to live in a fraternity house; that fraternities dictate the social life of a university or college and naturally set a pace which the farmer boy or ordinary young man cannot follow; that they tend to seclusion and aristocracy rather than to freedom and democracy."

In 1909 Hon. R. D. Graham, president of the State Board of Agriculture, made inquiries of all alumni, excepting the five most recent classes, soliciting their opinions as to the policy to adopt in housing and boarding students.

The following explains the views of the Board:



Piggery for producing hog cholera serum.

"In accord with the expressed sentiment of between eighty and ninety per cent. of the alumni heard from, be it resolved, that it shall be the policy of this institution to foster the dormitory system of housing students, and that efforts will be made to increase as rapidly as possible dormitory accommodations, eating halls, and quarters for social purposes. Resolved, further, that this Board shall not give its consent to the erection of society houses for living purposes, but it shall encourage the erection of houses by our literary societies for literary and social purposes, it being understood that such houses shall contain rooms for alumni and caretakers."

Thus it will be seen that after experimenting for fifteen years, making inquiries of former students and learning the experience of other colleges, the State Board turned right square about again to favor dormitories and boarding clubs on the campus. The faculty of M. A. C. may well take warning and continue their efforts to keep down expenses of students.

Here is something to the point in the Review of Reviews quoted in the M. A. C. Record, June 4, 1910:

"All academic leaders who are not hopelessly blinded, understand how life in a series of fraternity houses or social clubs fringing a college campus may militate against the best purposes for which American boys are supposed to be sent to college.

"And these college leaders would be glad if reforms could be made. But they lack the power to face and destroy these abuses that to so great an extent are harming college life. It is ridiculous that a great university should be dominated not by its authoritative workers, officers and those who make its scholarly and intellectual fame, but by undergraduate sentiment in harmful and even vicious phases.

"The abuses of fraternity and society systems at some institutions are so glaring that they are evident to all observers. The exclusive groups, while sometimes harmful to their own members, are often cruel in the pain they inflict upon those who feel themselves shut out. In some of our colleges so keen is the feeling in undergraduate circles that to be left out of certain privileged organizations is to have the whole college period poisoned in its memories.

"The habits formed in the college period will usually dominate the young man's future life. In the main, let us admit with candor, college life is not so far from what it should be that it is to be shunned rather than be accepted with its risks. But why not eliminate some of the risks? It is the duty of the college to admit only the young man who ought to be in the institution for proper reasons."

In his report for the year closing 1910, President Snyder expressed his belief that we were rapidly approaching the time when it will no longer be necessary to maintain our five-year courses, thus using the rooms and force of teachers for more advanced students and for short courses. The President referred to the retirement of the writer of this history, who had served the College a full forty years, teaching botany all that time. The State Board established a Division of Veterinary Medicine in response to the strong pressure brought to bear from various sources, selecting Dr. Richard P. Lyman as dean. So it was when the Division of Home Economics was established; it had been strongly urged from the outside.

Dean R. S. Shaw with pride described the new agricultural building just completed. (See Buildings.) Professor Anderson referred to some fine dairy cattle, the results of care in selecting and breeding.

The report of Professor Anderson is quoted:

"During the winter vacation the Jersey cow, College Queen, 195623, was given a seven-day test for 'Register of Merit.' She gave 17 pounds, 11 ounces of butter fat from 322 pounds and 1.6 ounces of milk, at 5 years of age. An inspection of Jersey records made during the last year shows this to be the second best seven-day record made by any Jersey cow during that time. All the Holstein cows are already entered in the advanced registry on seven-day records. Among the Holstein records made during the year, two are especially worthy of mention. Bonheur Lassie 2d 113068, gave 470 pounds of milk containing 16.498 pounds fat in 7 days as a senior 2 year old, while



Dwellings east of farm lane.

College Houwtje De Kol, 103909, gave 557.5 pounds of milk containing 20.205 pounds fat in 7 days as a senior 3 year old.

"A comparison of the 7-day records of Belle Sarcastic, Rosa Bonheur 5th, and Houwtje D. with the yield of College Houwtje De Kol show that this heifer has equalled the butter fat production of those mature cows, before she has reached the age of four years.

"Records of this size do not, however, elicit the comment that they formerly did. The development of the capacity of the dairy cow has been so rapid and so general in the past few years that one cannot safely foretell the limit of possible production."

The following is from Professor Eustace:

"The extension work in horticulture is meeting with splendid success. A special effort has been made to assist farmers who have manifested a desire to apply modern methods to old apple orchards, and to advise in

regard to new plantings in such matters as site, varieties, planting, pruning and cultivation. Considerable effort has been made to demonstrate the advantages of spraying potatoes. In all of this extension work an effort has been made to interest the people of the neighborhood and this is best done by demonstrations in the orchards and field."

The report for this year shows that the dean of the division of engineering had been looking well to the interest of his students not only while in college, but after leaving college, keeping run of the men to help them to good positions. He had taken commendable pride, worthy of imitation by other divisions, in keeping on exhibition photographs of all graduates.

As far as statistics alone could show, the conclusions to be drawn from the records of our engineering alumni at that time were very gratifying and indicated that the engineering work at the College had justified its establishment and maintenance. Dean Bissell says:



A special field building for soils.

"In order that the same statement may be made with like force at the end of another quarter century, constant and insistent attention must be given by the College, not only to the course of study and its development in step with the advancing ideas as to the requisites of technical education, but particularly to the question of efficiency of instruction. With the growth of the College this problem becomes of greater and greater moment, because the student is removed more and more from personal influence and teaching of the strong men of the faculty who are largely engaged in the necessary administrative work which goes with large schools and departments.

"The handling of large classes by inexperienced instructors, as is now the policy here, does not bridge the distance between the student and the professor, but rather the reverse. It is important that many men of assistant-professor grade or higher, with commensurate salaries be added to our teaching force and that good teachers once obtained be secured by salary or other inducements such as opportunity for research of commercial positions.

"I strongly recommend, as I have done in previous reports: (a) An advanced salary scale for the various grades of instructors. (b) The formal recognition and inauguration of experiment station work in engineering as

important measures for the maintenance of the engineering work of the College on a satisfactory plane."

Professor J. F. Baker continues to display unusual energy in the instruction of his forestry students during a portion of the long vacation.

"This summer term is of great benefit," he says, "for in no other way can the student get so much practical field work in the subjects presented."

"Through the invitation of the Salling and Hanson Lumber Company of Grayling, Michigan, the senior class in forestry, 12 (lumbering) spent two weeks in their camps at Frederic, studying conditions and methods during the month of December, 1909.

"By the kindness and courtesy of the State Public Domain Commission, the summer term for 1910, is now being held at Cold Springs on the shores of Higgins Lake, Roscommon county, Michigan. Here the students are on the state forest of 38,000 acres of variously timbered cut-over lands so common in the north central portion of the state. The subjects presented are the same as those taken up last year, i. e., civil engineering 2 and forestry 3 (forest mensuration). The work extends over a period of six weeks. There is a large well-lighted class room furnished with black boards and laboratory tables. Twenty-four students are classified and are now in camp at work. They are housed in tents, two men to a tent. They are walled tents $9\frac{1}{2} \times 12$ feet, furnished with a board floor, two iron beds with mattresses, a small table, two chairs and a lantern."

Dr. Beal presented his last report and enumerated the leading features of his work for each of the forty years. For details see his report in the Report of the Secretary of the State Board of Agriculture.

Professor Kedzie, in his report, says: "As stated in my report for last year this department is in need of additional space both for laboratory and recitation purposes. Our largest lecture room has seats for but 150 persons. The class in beginning chemistry in the fall term, 1909, numbered 411 students. This necessitates that I give the same lecture three times in order to reach each member of my class. I, therefore, recommend and urge that the matter of an addition to the present chemical building be considered by the Board of Agriculture."

A similar repetition in the teaching of certain classes in botany has been common during the past ten years, not always for lack of rooms, but on account of the complication in the daily program, a section of a class was divided the two portions coming at different periods.

Excellent points in the report of Dr. Blaisdell are noted:

"With the beginning of the year it was decided that freshmen and sophomores must become, by habit, familiar with certain things which should be learned even before they enter high school but which they do not know when they come to college. Among these essentials in an English education are terminal punctuation, capitalization, and the form of a business letter. At the beginning of the fall and winter terms it was announced to all classes that a part of the examination of each of these terms would be certain letters, and that any mistake made in the letter form would result in condition, unless the rest of the examination was perfect. This warning was frequently repeated throughout both these terms.

"During the winter term the department took charge of many of the first year short course men and gave them work in practical letter writing. While not one of the sixty-four men in the class wrote accurately the first letter which they were asked to write, every man, with the exception of three, wrote absolutely correct letters in the examination held at the end of the course.

It is believed that these men profited very much by the two hours per week given to this work."

Dr. Blaisdell accounts for the failure to win in a debating contest with the state normal college, by observing that our men have much less time to give to that kind of work than have men in academic institutions. He expresses satisfaction with the progress made in the new course in agricultural journalism, also with the work of instructors with individual students through appointments outside the class hour.

Dr. Hedrick for economics and political science notes:

"This fragmentary method of presenting economics and political science is further commended through the desirable harmony which may thereby be established between the teachings of these subjects and the teaching of the other subjects of the College. As is well known the laboratory methods of instruction are the ones which prevail here and the student almost unconsciously adapts himself to this method of study. It has been the practice of the teachers of this department therefore for some years past to select each year some 'live' problem within the field of the particular social study which he was presenting and concerning which,—largely because it was a 'live' question—public documents or at least magazine and newspaper discussions could be obtained, and treat the topic as in original investigation. This has been a time-absorbing method of instruction and, as has been said before, the student has not been able to cover the whole subject and it has relieved the student from extreme dependence upon the text book. It has resembled the method of study pursued in the laboratories and it has given vitality to the subject for both student and teacher through the employment of original sources."

This year, Warren Babcock was made full professor of mathematics in charge of the department.

A few words from the report of the Director of Physical Culture and Athletics, C. L. Brewer:

"The work of the representative athletic teams has been very good in all branches; the football team was probably the strongest ever to represent the institution, and brought considerable recognition to the College by defeating such strong western teams as those of Wabash, Marquette and De Paul.

"A great effort was made during the year to interest as large a number as possible of the young men of the College in some sort of work of the department, and the result was very gratifying. Regular class-work was given during the winter, which consisted of the usual dumb bell, Indian club and wand drills, breathing and setting up exercises, and apparatus work, and a large number, especially under classmen, took advantage of it. Throughout the year interclass and interhall contests in all of the sports were arranged, and the interest was very keen at all times. A squad in cross-country running, a splendidly healthful exercise, was maintained throughout the year, and as many as one hundred fifty were enrolled for this work at one time.

"I wish to again call your attention to the necessities for a gymnasium in the immediate future. With no gymnasium, the work of the department is so handicapped that it is impossible to make any progress along the lines of true physical education for all the men. A physical examination should be made of every boy entering college, followed by compulsory course in hygiene, sanitation, clean living and physical exercise. This must be done

if the department is to take rank on a par with similar departments in other institutions, but it is impossible under present conditions."

Professor Barrows again mentions with emphasis:

"In common with most other departments we suffer more or less from lack of class and laboratory room, but have been able thus far to make temporary arrangements which permit of fair work. The time, however, is not far distant when the department will need an entire building with the modern facilities and appliances which advanced biology demands.

"The general museum, which comes under the care of this department, merits more than a passing notice. Owing to its location on the second floor of the library building, and to the overcrowded condition of its cases, its size and importance are usually much underestimated. No special fund is set apart for it, and the only care bestowed upon it is such as can be given by the members of the teaching force of the department when they can be spared from academic work."

Marked changes have taken place in the experiment station where over \$40,000 yearly was being expended adding very materially to the growth of the College and the efficiency of extension work, details of which cannot be given here.

In 1910 an interesting compilation was made showing the vast number of M. A. C. men who had reached responsible positions in other institutions. This report showed that in 1889, seven or one-sixth of the forty-two agricultural experiment stations then existing in the United States, were presided over by men from this Michigan College. In 1908-10, eleven out of fifty-seven directors of experiment stations in this country were men who got their start in Michigan Agricultural College. Here is the list:

Alaska—Sitka; C. C. Georgeson, M. S., '78.

Colorado—Fort Collins; L. G. Carpenter, M. S., '79.

Connecticut—Storrs; L. A. Clinton, B. S., '89.

Idaho—Moscow; E. E. Elliott, (A. M. 1884, Monmouth College) took special work under Dr. Beal in 1897-98.

Illinois—Urbana; E. Davenport, M. S., '78.

Missouri—Columbia; F. B. Mumford, M. S., '91.

Nebraska—Lincoln; E. A. Burnett, B. S., '87.

New Hampshire—Durham; E. D. Sanderson, B. S., '97.

New York—Ithaca; L. H. Bailey, M. S., '82.

Ohio—Wooster; C. E. Thorne, with '66-'67.

Wyoming—Laramie; J. D. Towar, B. S., '85.

In taking up the annual report of the secretary of the State Board of Agriculture for June 30, 1911, I am forced to compare it with the early reports covering accounts of the College. For a long time there were four to six persons making reports. Even when the College was thirty years old, there were only nine departments to report, while in 1911, there are thirty, indicating that most of the growth has been made during the last twenty-four years—the best of that during the last ten years.

President Snyder in his report for 1911 observes:

"The last legislature, appreciating the great need of better library and auditorium facilities, voted \$150,000 for the erection of such a building, but the Governor interposed his veto and the measure, greatly to our regret, failed."

After this veto when speaking in different portions of the state Governor

Osborn boasted about saving the state a million dollars, apparently not realizing that a portion of the saving (?) was lopping off the amount asked for a library and auditorium which could fairly be considered a most productive investment, and not a gift.

"There must and will be," continues President Snyder, "a great movement along all lines of agriculture education within the next few years. The work has just begun. Agricultural colleges and experiment stations must be the leaders in this great movement. They should assume the leadership and by aggressive effort maintain it. If they are not ready to meet the great demands made upon them independent movements will spring into being which though good in themselves will be much less effective than if directed by central organization. This College will need during the next few years in order to meet the responsibility placed upon it greater financial support than it has received in the past. The College has the confidence of the people of the state and it is believed that if they realized the need of the College, financial support would not be lacking."

Dean Shaw refers to a "dicker" that he and Professor Baker made: In order to economize as regards labor and locate the nursery work within easy access of the student and visitor, field number 6, located just across the Cedar river, has been turned over to the forestry department for nursery work. In return for the tract, which comprises about 29 acres, lands hitherto used for forestry purposes located between the Pere Marquette railroad and the Mt. Hope avenue road have been turned over to the farm department. He mentions the first training of delinquent students during the summer vacation, though promised for ten or more years:

"On June 19, a four weeks' summer school in practical agriculture was opened with about fifteen young men in attendance. The object of this special course is to give young men from villages, towns and cities lacking in farm experience, an opportunity to learn how to do all kinds of farm work in the most efficient manner, though the time allotted is not expected to produce skillful laborers. Those who have not been trained on well operated farms are required to take this course before graduation."

In marked contrast to reports of most of the thirty departments, it is refreshing to read the optimistic one by Professor Jeffery:

"It is a pleasure to report that along all lines, we have been enabled, as predicted in our report of a year ago, to enlarge and make more practical the different courses which we are offering the students. This is due to the better facilities offered by the new building for such work and also to its influence upon the spirit of the student body.

"A new departure this year was a trip of inspection to six typical farms of Michigan. The results were so gratifying that it is planned to make this feature a permanent work of the future. The inspection of these farms gave to the students a better conception of the possibilities of the farm, as well as of the importance of correct management.

"As usual there has been a large demand for extension work, so large indeed that we were unable to respond to all the calls made for help in this direction. These calls came from the State Teachers' Association; high schools of the state; the farmers' institutes; boys' corn growing contest; county Y. M. C. A.'s; normal schools; county commissioners; etc."

Professor Anderson refers to the practice of applying to all cattle the test for tuberculosis,—that during the past year none of the dairy animals of the college herd responded to the test.

In asking for greenhouses for experimenting and teaching, Professor Eustace says:

"The lack of this equipment is a serious one for the department and ranks us behind other colleges and universities that we have to compete with in training students. It is hoped that provision can be made at an early date to erect these houses."

In 1894, President Gorton employed a man to begin experiments with poultry, but the project was soon abandoned because of the defective education of the person employed. Later it was resumed with much the same result, but in 1908 the work was resumed by Assistant Professor Halpin and is still active and popular at the College and in extension work.

The Professor of Forestry, J. Fred Baker, is still active during vacations and at all times in furthering the education of his students by giving courses in the work, and in camp, getting out logs, in camps in Arkansas, and visiting cypress mills in Louisiana.

Dean Bissell repeats with emphasis on the policy of engaging cheap inexperienced teachers with no plan for promotion for those who are competent.

Dr. C. E. Marshall, with the assistance of a considerable number of other eminent men, had prepared a text-book in bacteriology for use in agricultural colleges. Dr. Marshall had eleven persons to assist in teaching and in carrying on experiments.

Dr. Bessey was making plans to extend the room for the herbarium since his predecessor, the writer, had left the cases very nearly filled, containing about 110,000 plants.

Students who were at the College twenty years ago and earlier have little conception of the number and variety of periodicals, nearly five hundred, displayed in the library. Of books there are 34,228.

The management of this college has been conservative, especially during the two long administrations of President Abbot, and President Snyder, yet there has been a steady growth each year. The students dress better and perhaps they live better and have better rooms, especially in Wells Hall, heated by steam, lighted by electricity and with toilets on each floor. They have a good bath house and yet there is another thing lacking, they want hot water in each room and they will get it.

In turning over page after page in search of items for the history of the College, the writer finds the reports of the secretary of the State Board of Agriculture, the reports of the superintendent of farmer's institutes and the M. A. C. Record for 1908-1909 exceeding those of any previous year in the number and value of useful information, the added attraction and equipment in great contrast to what can be found anywhere concerning the College in early days. These publications fairly bristle with a great variety and scope of teaching and experimenting, both at the College and among the farmers of Michigan.

You old fellows of 1870, and earlier, think of this College in 1911 with 1,600 students and a corresponding increase in the number in the faculty! Witness a military parade of 700—900 men in uniform, and see the puzzled look of the Commandant as he hunts for a spot long enough to display his cadets. Visit the library of 33,000 books and 466 periodicals, American and foreign! See the large numbers of good buildings, trees and extensive lawns in place of charred logs and stumps or ragged fields!

This would seem to be a favorable place to call attention to the lighter sides of college activity, a number of features of which have shown great development in the last half dozen years.

THE JUNIOR HOP.

In the past fifteen years the junior hop at M. A. C. has developed from an informal dance held in the rooms of one of the literary societies to the most formal of all our college functions.

Each hop has been a little more formal, elaborate and expensive than any preceding with the feeling that some succeeding class may equal but never can excel the product of "our class." It has outgrown all conveniences at the College and is given in the Masonic Temple in Lansing.

The junior hop is an event never to be forgotten and those who attend will ever remember it as one of the happiest events of their college life.

THE CIRCUS OR CARNIVAL.

Beginning in 1906 a circus or carnival has been held by the students each spring term, offering much amusement and raising some money for charitable purposes, such as boosting the Holcad or helping defray the expenses of the athletic association. The horticultural department also lends a hand by cleaning up the rubbish. The advertising furnishes an excellent practice for the sophomores in the use of bombastic language. Witness the following in the M. A. C. Record April 13, 1909:

"The armory and vicinity were converted into a veritable hippodrome Saturday, when it was the scene of the third and by far the most successful athletic carnival ever attempted at M. A. C.

"The circus opened at 1:30 with a magnificent street parade with three bands and accompanied by the usual complement of clowns and rough riders. After making the rounds of the campus the parade returned to the armory where the show was on in earnest.

"The armory was divided into booths where various special acts were pulled off, including the Salome dance hall, Coulter's Rescue Mission for thirsty souls, etc., while along the north side 'dainty delicious delicacies were deftly dispensed by the demure damsels of the dean's department!' No supper was served at the clubs and everyone had to eat at the lunch counter or go hungry.

"In the bath house Dr. Chapman held forth with his famous side show. Among the attractions were Wadji, the fossil bedbug, sole survivor of "Saints Rest," the Outre-Goojam Twins, the wild man of New Jersey and Countess Valeski Awfulitch, the Russian bearded lady.

"The total receipts of the occasion were about \$500, with a net profit of some \$400." Here is one sentence in the advertisement of a similar circus at Cornell: "President Roosevelt slipped up yesterday on his Cabinet tennis court and landing on his hip pocket, broke a twenty-dollar bill. He announces that he will come to Ithaca to spend the change."

ANNUAL BARBECUE.

M. A. C.'s first annual barbecue was held on a Friday evening, October, 1908, in the hollow in front of Wells' Hall. All day the ox had been roasting, and at about 7:30 p. m. the band began the festivities with a concert, the numbers being interspersed with talks by members of the football team, W. H. Small, '08, and Secretary Brown. The college yells and songs also played an important part. At about 8:30 the "chef" assisted by three cooks from the Hotel Downey began carving the ox, and the guests were served as they passed

by, seniors first, with a cup of sweet cider, and a generous ox sandwich. Though the first of its kind at the college everything moved off without friction. It will probably become an established custom. One of the pretty ceremonies was the presentation of a carving knife by President Kurtz, of the senior class, to the sophomore class which is to be handed down to the succeeding class each year.

A year later, November, 1909, the Record notes:

"One of the finest demonstrations of college spirit and good cheer ever held on the campus was given Friday night by the sophomores.

"It is at this barbecue that all class differences cease, time-honored enmity is transformed into general good-fellowship and the memory of defeat becomes one as of long standing. The barbecue marks an epoch in the social life of the college so far as it pertains to the two lower classes, and has the tendency to abate the spirit of rivalry which has had a marked effect in tabooing all higher institutions of learning ever since Heidelberg was in its infancy. It is to be hoped that the barbecue may grow not only in the amount of ox sandwiches and cider served but in its varied usefulness as well.

"In looking over the records we do not find mention of any previous general convocation of the student body either formal or informal inaugurated for a similar purpose, and although this is an innovation at M. A. C. it is one the success of which is rarely equaled.

"Short talks were made by members of the faculty and student body, and the band and the bell furnished the music.

"It was roughly estimated that some 1,500 persons partook of sweet cider and beef sandwiches by the light of the big bonfire in the hollow in front of Wells' Hall."

THE PROMENADE CONCERT.

In November 1908, a good many of the new students are asking, "What is this promenade concert to be, anyway? Is it a dance, or is it a concert? What is the admission? Can we invite the ladies? Is it worth going to?"

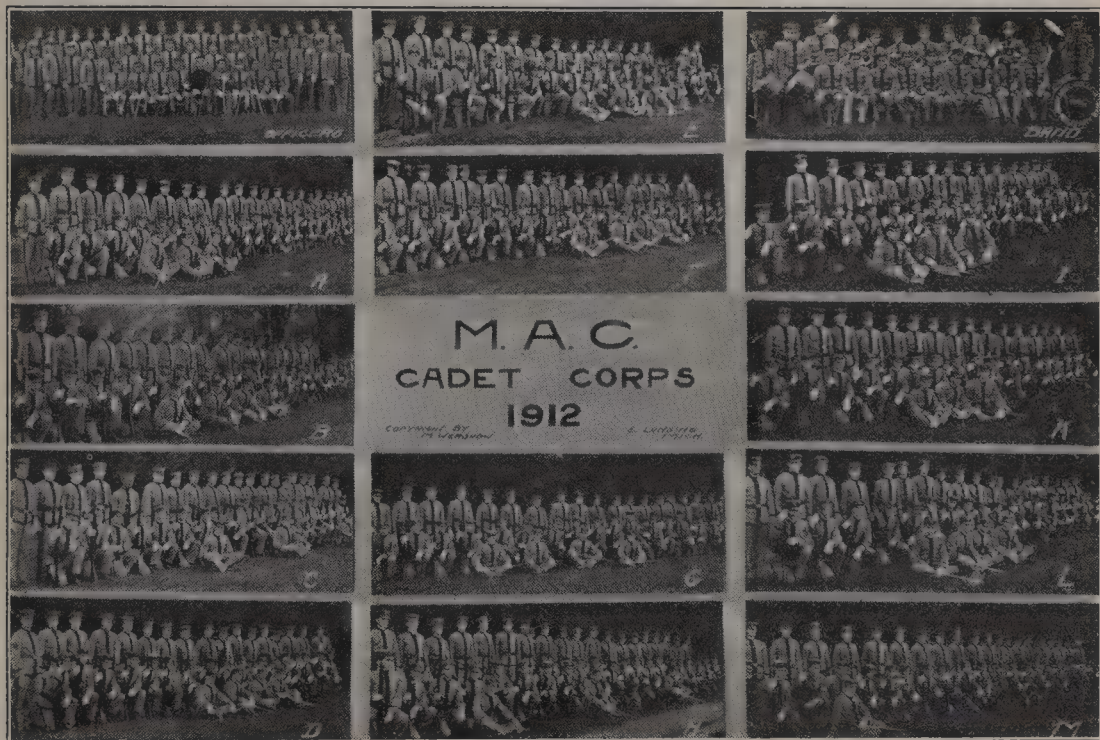
"With the football season nearing an end there are very few occasions when the student body is called together in what might be termed 'all college affairs.' It was to provide such occasions for all college gatherings that the promenade concerts were arranged. The admission is 15c for the men. As to inviting the ladies, they are already invited and will arrive at the armory in a body at 7:20 p. m., Nov. 20th. After that, it is surely not necessary to ask, 'Is it worth going to?' We have the best band this year in the history of the College. They are working for the College. Fall in behind the band and push."

The question naturally arises whether with all these outside activities including many of the developments in athletics, college work is not injured.

In an address before the National Association of State Universities, President Schurman, of Cornell, touched upon "student activities" in this manner: "These extra-curriculum activities have become, in the last decade or two, a serious menace to the real functions of our universities, state and endowed alike. In themselves considered, these so-called student activities are proper, and may be even laudable. I need not point out, though the fact escapes general attention save in the case of football, that these outside activities absorb the time and interest of the students who participate in them to the detriment of that intellectual training and education for the sake of which they presumably came to the university. It is no relief to the situation to point out that such students derive a valuable

experience from these non-academic pursuits. Undoubtedly they do. But the university does not exist for the sake of side-shows that can be grouped about its hospitable campus. They are mere phenomena, or even epiphenomena, that play about that vital and essential reality which we call the university. To substitute them for it is to glorify the shadow as the substance.

"At Oxford and Cambridge students are divided into 'pass' and 'honor' men, the former numbered by thousands the latter numbered by hundreds. With us in the United States, speaking generally, all degrees of the same denomination conferred by a university have the same value. The result is that our degrees are held in little esteem by the public."



During the year 1913, Mrs. Ella Flagg Young, Superintendent of Schools of Chicago said: "That there is a weakening of moral fiber, a restless craving for amusement, a lack of serious purpose and an increasing temptation to idleness or worse in the opinion of many trustworthy observers of the younger generation. In so far as vocational training can hold their flagging interest and fit them for useful work, it is doing a great social service."

During the year ending June 30, 1912, the College continues to grow, graduating this year sixty-six from the Division of Agriculture, fifty-four from the Division of Engineering, thirty from the Division of Home Economics, fifteen from the Department of Forestry,—whole number one hundred sixty-five. The net enrollment of students was 1,702, with a marked improvement from year to year in the preparation for college work.

Accompanying a satisfactory growth was a pressing need of more money to employ more teachers, to build more class rooms to house more students.

As was expected when every line of farming became highly profitable a

larger per cent of students entered the division of agriculture. Twenty-six high schools in as many counties had introduced agriculture in their courses with a graduate of the Michigan Agricultural College to carry out the work; sixteen women from the last class of the College were teaching domestic science. The demand for teachers for such work was exceeding the supply. Elaborate exhibits had been made at several fairs and at the College in connection with the round-up institutes. The geological survey had decided to store its botanical collections at the Agricultural College. The plan of selling bottles of one hundred fifty or more species of seeds of weeds and grasses at less than cost to high schools, granges and any others which had been practiced for fifteen or more years, was continued.

The chemical department had seen the completion of a fine and much needed addition to the laboratory, sufficient for seating at lectures, 400 students and providing laboratory space for 286 students. In 1913, these rooms were filled to overflowing.

Beginning July 1st, the summer vacation of 1912 was enlivened and enriched, by the fifth session of the graduate school of agriculture and the fourth session of the graduate school of home economics. The former was held under the auspices of the American Association of Agricultural Colleges and Experiment Stations, and the latter under the auspices of the American Home Economics Association.

These schools were in session during four weeks. The former school is held once in two years at some agricultural college and is managed chiefly by Dr. A. C. True of the U. S. Department of Agriculture. The chairman of the other school was Mrs. Alice P. Norton of the University of Chicago. The Board of Agriculture appropriated \$2,000 and \$500 respectively, to aid in defraying the expenses of these two schools.

Notable among the changes of the faculty was the loss of Dr. T. C. Blaisdell, Professor of English who resigned to accept the presidency of Alma College and of Dr. C. E. Marshall, Professor of Bacteriology who became Professor of Bacteriology and Dean of the Graduate School of Massachusetts Agricultural College

For the first time each student of the College, in 1912, was assessed six dollars, called a blanket tax, contributing to the expense of a lecture course and to help support athletics.

A beginning was made toward a new dairy building to cost \$75,000, the department giving up the first building erected in 1900, costing \$15,000 to the department of forestry.

The Holcad contained considerable about the athletic victories won during the year under the leadership of Professor Macklin and every M. A. C. student is proud of the success of the college band of fifty pieces under Professor A. J. Clark. The band made a trip to Columbus, Ohio, and to several other cities.

During the year ending June 30, 1913, Professor J. A. Jeffery resigned to become Land Commissioner for the Duluth, South Shore and Atlantic Railway. His duties will consist chiefly in instructing farmers along the lines in business methods in agriculture.

The vacancy in the chair of mathematics caused by the death of Warren Babcock, was filled by the appointment of Louis Clark Plant.

The resignation of Maude Gilchrist, Dean of Home Economics, was filled by the selection of Dr. Georgiana Laura White, who will assume her duties at the opening of the spring term in 1914.

John B. DeLancy was assigned to the chair of military tactics in place of A. C. Cron, whose time of service had expired.

The members of the Olympic society purchased the Holdsworth house at a cost of \$9,000.

Trains equipped for college extension work traversed the Upper Peninsula attracting much attention.

It gratified all friends of the institution to witness the college spirit of the alumni gathered at the Commencement of 1913.

A very important event was the lease of C. D. Woodbury's farm of 336 acres with the privilege of purchase within ten years. This added to the present holding will make a total of 1,020 acres. Development of plans for the use of these lands will appear from time to time.

Other leading events of the past year are noticed in several other chapters of this volume.

ANOTHER COLLEGE WINNER.

Late in November, 1913, College Bravura, a Brown Swiss cow, No. 2577, born at the college in 1901, after a year's trial was found to have produced milk 19,460.6 lbs., butter fat 798,164 lbs. equivalent to butter 997.705 lbs. This is the best world's record so far for this breed of cattle

ARBORETUM.

To a person accustomed to a new county, a term still applicable to Lansing, and vicinity in 1913, it may seem strange to go into the "woods" where the trees are arranged in straight rows. In the campus an artificial forest was begun in 1875 on a piece of land constituting about one and one-half acres, located next to the road north of the College and the north entrance, just where it is likely to be seen on one side and on one end by all who visit the College by way of the street railway. Unfortunately for the visitor, the trees are of different ages, so mistakes are likely to be made in estimating the relative growth and value. Some years ago, this area included 215 species of trees and shrubs and probably contains about 150 today (1913).

The trees were nearly all started by p'anting the seeds and nuts, before drying, just where they were expected to remain.

Giving the results of any measurements of the height and diameter would be quite misleading in many cases, because of differences in the soil and in the space occupied as well as for several other reasons, yet such measurements would be worth mentioning. Trees suitable for good telegraph poles have been grown on favorable soil in 30 years.

The numerous mistakes made in the arrangement of the trees are instructive as well as the successful efforts at proper arrangement.

THE FOREST, PINETUM.

The native forest of about 190 acres consists of two isolated areas from which most of the valuable timber has been removed.

The nursery consists of about 25 acres where millions of young trees are growing, all managed by the professor of forestry in a most creditable manner.

A small Pinetum of two to three acres was planted by Dr. Beal in the spring of 1896 and is now (1913) most attractive.

FARMERS' INSTITUTES.

The writer has known for a good while that Professor L. R. Taft was a very efficient superintendent of farmers' institutes. From his last report, we glean: "In no previous year have so many farmers' institutes been held in Michigan, or the interest in the work been so great. One feature has been the general distribution of the meetings. In round numbers there were, in addition to the Round-up institute, two three-day institutes and 82 county institutes of which 69 held sessions for two days. Nearly all of the others were in the Upper Peninsula. For the first time in many years an institute has been held in every county in the Lower Peninsula and there was but one county, Keweenaw, in the Upper Peninsula which did not have at least one institute."

The Round-up of 1913 was held at the College in February and was the most successful one in every particular. The total estimate of attendance was 6,000 and during a portion of the time, there were seven meetings going at one time.

CHAPTER IX.

COURSES OF STUDY.

DIVISIONS OF THE COLLEGE.

Agricultural Division.

There are in the state many districts better adapted to wheat than ours, as there are sections not so subject to drouth and frost. The farm has a great variety of soil of medium quality. As you enter the grounds from the west you ascend a hill, having the Red Cedar river beneath a steep and curved bank on your right. This hill is stiff clay, and has been taken for pear, plum and cherry trees. Where the river bears to the right from the drive, we have alluvial soil, and about the buildings, light, sandy loam or sand,—the college buildings standing in an old grove of oaks with now and then a tulip tree, cherry, sassafras, beech or basswood, with several elms, ashes, maples and others. We have clay loam, and light peaty loam and peat. The farm was selected partially in view of this variety of soil.

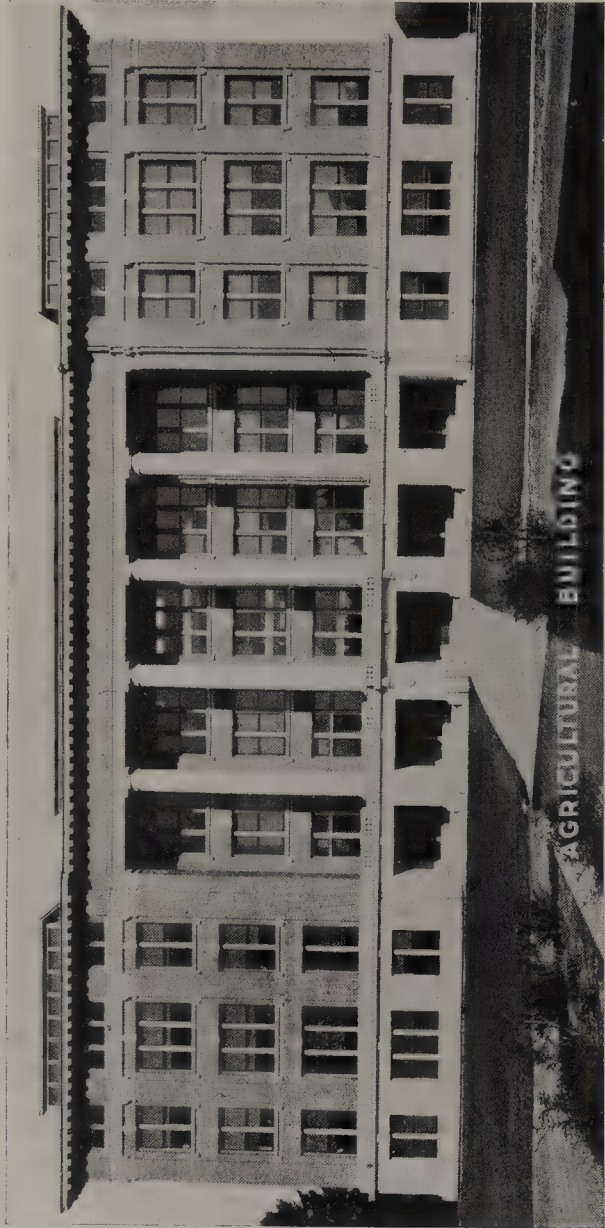
In the early days of the College, and previously, there was a good deal said about the importance of having somewhere in the state, a model farm, which in recent years, at least, it would be difficult to define; this farmer would say it should grow large herds of dairy cattle; another would think grain should be the most prominent feature; one would be disappointed unless a herd of cattle were fattened each year; some would want the farmer to breed draft horses (which breed?), some, roadsters. To breed all the leading kinds of horses, cattle, sheep, swine, poultry; to grow fields of many sorts of grains, fruits, and vegetables, would require a farm of several thousand acres in extent and in a location favorable to most kinds of fruits that only thrive where the winters are mild.

In these days the educated farmer looks at a college farm as an out-of-door laboratory rather than a model farm. As Davenport puts it: "The best friends of the institution may forget that its real business is invention and the discovery of principles and their application, not to the making of a collection of models which men may cart home and use without mental application."

Continually, from the beginning, the agricultural division has been most favored.

1. It was the only department for twenty-eight years, until 1885.
2. Even after the divisions of engineering, home economics, veterinary medicine and science and art were established, one after the other in slow succession, the agricultural division had the advantage in size of equipment.
3. It has been advertised the most extensively by exhibits at fairs and at large numbers of farmers' institutes, by special railway trains, by demonstration and other forms of extension work and by large amounts paid for conducting experiments, since 1910 at least \$30,000 annually being granted by the nation for experimental work.

As long as there was but one division, all students joined that as a condition of attending college, though they might have no intention of making agriculture their life work, but as soon as the division of engineering appeared, many students preferred it and so it was later when forestry was



made a department and doubtless, to some extent, the veterinary division will also cut into agriculture.

At present those selecting the division of agriculture are doing so from choice and when graduated, almost to a man, will follow the line of work in which they have especially prepared. With this explanation, the agricultural division was not—is not—so badly off as it once appeared to be.

The report of a committee of the faculty, given in the chapter on attendance,

mentions the low price of farm products as a prominent reason for the dearth of agricultural students. I am sure that this is a very prominent reason why few farmers of that time advised their sons to join the agricultural division. Hard times in 1893, before and after, helped to turn young men from agriculture as a business.

As the proportion of farmers in this country diminishes and population increases, produce is sure to rise in price.

After the new land, as well as the old, becomes less and less fertile, insects and fungi more troublesome and weed pests more frequent, the opportunity for the primitive farmer will greatly diminish. Other things being equal, the well-trained man will win because he is master of a hundred little devices that the other man dare not attempt. The other man will fail to spray his orchard, or to improve the quality of his farm crops which will be likely to "run out."

About 1896, students began to increase rapidly in numbers, not only because Dr. J. L. Snyder was president nor because the other members of the faculty on the whole were so much superior to those that preceded them by a few years, but because the times were ripe for such increase.

Look at the increase in numbers and in popularity at that time, of the Agricultural Colleges of Kansas, Iowa, Pennsylvania, Oregon, New York, Ohio, Indiana, Wisconsin, Illinois and Missouri. In recent times M. A. C. has relatively fallen behind some six or eight of the above colleges, instead of holding her own as the foremost of all.

Doubtless the competition for students of a very progressive university in the state has tended to keep the numbers at M. A. C. lower than they otherwise would be.

"During the summer of 1863, Dr. Miles, under the direction of the Board, visited the eastern herds of Short-Horns and Devons, and made a purchase of a bull and two heifers of each breed. They are all animals of great beauty and of the choicest blood. Hon. J. B. Crippen, of Coldwater, presented a pure blood heifer to the College before any purchase had been made. It is hoped that these animals may serve—not only as means of instruction—their first use—but to improve the stock of the state." (9)

The writer prepared a report of some of the famous cattle of the College, but has cut it out because it is likely to be soon out of date and behind the times.

COURSES OF STUDY.

From the start the Michigan Agricultural College, in teaching students, blazed out a new road for itself. In the beginning, with only six professors, all strangers to each other, it was not to be expected that full-fledged plans of studies should be clearly mapped out; besides, the boys were fresh from the common school and were of uneven grade. For a while the professors had to cut and try and work over, adjusting this and that plan.

Some general features of the course to pursue had been decided before the college farm was secured.

The Constitution of Michigan requires that "The Legislature shall provide for the establishment of an agricultural school for instruction in agriculture and the natural sciences connected therewith." (Revised Constitution, 1850, Art. XIII, 11.)

The laws of Michigan—Howell's Annotated Statutes—provide as follows: "4988. This institution shall combine physical with intellectual education, and shall be a high seminary of learning in which the graduate of the common school can commence, pursue, and finish a course of study, terminat-

ing in thorough theoretical and practical instruction in those sciences and arts which bear directly upon agriculture and kindred industrial pursuits."

For 33 years the requirements for admission to the freshman class, as it appeared in successive catalogues, was as follows: To pass a satisfactory examination in arithmetic, geography, grammar, reading, spelling and penmanship. A knowledge of elementary algebra is desirable.

In 1861, even with these requirements for admission, the college was empowered to confer the degree of Bachelor of Science on young men who had attended classes for four years.

Long, long before 33 years had passed, this low standard of admission frequently called forth criticism from various sources.

It was not until September 1858, that the faculty got together a plan of studies which was submitted to the Board for approval.

The following is taken from the catalogue of 1861:

COURSE OF INSTRUCTION.

PREPARATORY.

Higher Arithmetic,
Physical and Mathematical Geography,
English Grammar.

Algebra,
Natural Philosophy,
Rhetoric.

COLLEGE COURSE.

FIRST YEAR.

Geometry,
Meteorology,
History.

Trigonometry and Surveying,
Elementary Chemistry,
English Literature, Book-keeping.

SECOND YEAR.

Physics,
Vegetable Physiology, Horticulture,
Rhetoric.

Civil Engineering,
Botany, Horticulture, Mineralogy,
Inductive Logic.

THIRD YEAR.

Drawing and Rural Engineering,
Geology,
Mental Philosophy.

Astronomy,
Zoology,
Moral Philosophy,

FOURTH YEAR.

Analytical Chemistry,
Animal Physiology,
Political Economy.

Agricultural Chemistry,
Entomology, Veterinary Medicine, Economy
of Domestic Animals,
Agricultural and Geographical Botany, Tech-
nology, Household and Rural Economy.

During the year 1857-58, the manual labor and the classes were neither confined to the forenoon nor to the afternoon, but sections alternated through the day. After a few years the manual labor for three hours served as laboratory practice and aided materially in giving boys much valuable training. Students were divided into three sections for labor. They rose early in those days. Chapel exercises were at five-thirty, a. m.; breakfast was at, or near, six. Labor for the first section of students began at six-thirty and lasted till nine-thirty. Meanwhile classes for the other two sections were going on, beginning at seven a. m. At nine-thirty the second section went to work, mainly logging and clearing up land. At twelve-thirty all took dinner, and from one-thirty till four-thirty the third division labored.

After two years, all recitations and lectures ceased by twelve o'clock, and after dinner the manual labor occupied all students for three to four hours.

The following is a sample program for the forenoon:

SCHEME OF RECITATIONS FOR 1872

FIRST TERM.

Class.	8 a. m.	9 a. m.	10 a. m.	11 a. m.
Senior..... {		Agriculture. Zoology.	Astronomy. French.	Landscape gardening. Civil engineering.
Junior..... {	Analytical chemistry.	Analytical chemistry.	Praxis, four weeks. Analytical chemistry.	Drawing, six weeks. Rhetoric.
Sophomore..... {		English Literature.	Praxis, four weeks. Botany.	Elementary chemistry. Book-keeping, six weeks
Freshman..... {		Praxis, six weeks. History.	Algebra.	Physical geography.

SECOND TERM.

Class.	8 a. m.	9 a. m.	10 a. m.	11 a. m.
Senior... {		Mental philosophy.	Moral philosophy. Political economy.	French.
Junior.....		Mechanics.	Physiology.	Chemical physics.
Sophomore..... {	Analytical chemistry.	Analytical chemistry.	Praxis, three weeks. Analytical chemistry.	Botany, ten weeks. Horticulture.
Freshman..... {	Agriculture.	Praxis, four weeks. Botany.	Algebra, common. Geometry.	

For two reasons it does not seem worth while to present details of the courses of study as adopted in recent years: 1st, current catalogues of the College are always available to give the latest information on the subject; 2nd, never a year passes in which some member of the faculty doesn't make one or more changes in the subjects which he teaches, while each newly appointed head of a department is sure to be unwilling to follow the program of his predecessor. During his long service as a member of the faculty, the writer has again and again seen these changes going on. No sooner has a schedule been adopted than something occurs to make it seem necessary to begin to inaugurate change. Advances made in different departments of knowledge tend to make changes.

Fortunately all along down the years of the College there have been in the faculty some strong men of vision who have seen the importance of giving the instruction a practical trend. For thirty-five years the intimacy of the faculty with citizens of all kinds, and with what they wanted of the College, has served as a guide. Great stress has been placed on laboratory work in the shop, field and garden, as well as in the class room. The reader will study Chapter XI, on Methods of Teaching.

In 1859 the change in the daily program, to bring all the studies in the forenoon and all the labor in the afternoon was not made for the convenience of those who superintended the labor, but to suit those whose chief business it was to teach and lecture, they claiming that students who labored in the forenoon were likely to go to sleep in class during the afternoon.

Teachers are usually ambitious to get as much time as they can for their classes, and in this there is always sure to be rivalry. I give an extreme case: In 1872 and later, the sophomores spent three continuous hours daily in the second semester in analytical chemistry, leaving but one hour for one other study, as no classes came in the afternoon; in other words, this class in chemistry took the place of two classes instead of one, as the usual requirement was three classes each day.

In 1895, not satisfied with this, Dr. Kedzie reported: "I met my sophomores one evening each week for a chemical conversation, and every Saturday morning for two hours to give them practice in chemical manipulation. It was very rare to find any one absent." Possibly absences were liable to have their bearing on the final examinations.

The plan of placing all classes in the forenoon and all labor in the afternoon was maintained, with slight interruptions, till 1893, when L. G. Gorton

was President and while C. D. Smith was professor of agriculture, then the plans began to break up with some classes in the afternoon. The subject is more fully considered under the chapter on Manual Labor. From the start, in 1885, some sections of students in mechanical engineering had shop work in the forenoon.

In March 1884, the State Board of Agriculture voted:

"Resolved, That the graduates of graded schools having a regular course of study such as shall be approved by the faculty, or the Board, or by any committee appointed by the Board, shall be admitted without examination in college preparatory studies on presenting properly certified certificates of graduation.

"It was made the duty of the secretary of the Board to visit schools desirous of availing themselves of this privilege, with authority to determine whether they should be admitted into this relation to the College." This was expected, in a measure, to affiliate the common school and the College.

Up to, and including, the College year beginning September 1882, "the courses" of study were the same for all regular students, with no chance for deviation.

In 1883 the seniors were for the first time permitted each term to select three out of five studies. This was a step toward enabling students to secure a more thorough knowledge of some chosen branch of science or of practice. At the same time veterinary science was extended from a half term to three whole terms daily.

For forty years from the opening of the College the academic year began late in February and closed about the tenth of November, leaving the long vacation in winter. The change was made in 1896, when the college year began on September 14th, and closed about June 20, 1897. The system then adopted has been followed to the present time.

Though the old plan made it possible for a number of students to teach school during the winter vacation and thereby gain the means for defraying their expenses during the remainder of the year, still a great many of the friends of the school had urged, from time to time, that the plan ordinarily pursued by colleges would be much more satisfactory to the majority of those interested. Agriculture can now be studied to very good advantage during the spring and fall. It is believed that students, from the practical standpoint, will lose nothing, while on the other hand they will be benefited in many ways by the change.

The first scheme was favorable for allowing students in agriculture, horticulture and botany to study crops of all kinds during the growing season. It was also more convenient for conducting institutes when the professors were "enjoying" the long winter vacation. Some of the professors really had very little vacation during the entire year. The new scheme corresponded with that in most other colleges and made it possible for professors to attend societies and conventions with those from most other colleges. Later, with students taking short courses in winter, in addition to students in the long courses, it became impossible for teachers to attend many institutes, without neglecting their regular college work.

In September 1899, the requirements for entering the freshman class were increased and put on a par with those at the University, viz., graduates of approved high schools were admitted without examination. This class of students increased from year to year and set the pace for others to maintain, fall back or drop out.

This movement was far-reaching and important for two reasons: the re-

quirements for entering were raised, removing the stigma of a low-grade college, and the better high schools and the College became more closely affiliated.

At the time the requirements to enter the freshman class were raised, a fifth year (preparatory year) was prefixed to the agricultural and women's divisions, to comply with a state law which compelled the College to admit students from the eighth grade. Such students were required to spend five years at the College in order to receive the B. S. degree. In other words, these eighth-grade students were expected (?) to perform the work of four years in one year. This plan was most discouraging for the student and unfortunate for the College and will be abandoned at the close of the college year 1913-14.

The entrance requirements would have been raised many years before 1899, had it not been for some timid souls who continually quoted the laws requiring admission from the common school. Granting that the law might have been changed, they still believed that students would rapidly diminish in numbers. On the contrary, the raising of requirements served immediately to increase the numbers entering the College.

From 1857 to 1884—a period of 27 years—there was but one division of the College in operation—the agricultural. The reader will recall the fact that in consideration of the national land grant of 1862 a division of mechanical engineering was contemplated. The very small amount of money at the disposal of the State Board of Agriculture influenced President Abbot to advise using it all for advancing agriculture, which scarcely had means enough to maintain a thrifty existence.

From 1857 to 1875, when the Agricultural College was new, there was no trouble in deciding what subjects should engage the students during the four years in college, because science was young, so was agriculture, but in time, progress was made in every department of human knowledge. Investigations and experiments made it seem very desirable, if not necessary, to require students to take additional topics, beyond the fifteen to seventeen per week usually required.

The teachers of agriculture and later the teachers of engineering, and by degrees also the teachers of the sciences added a topic here and a topic there, until by 1900, each student was required to take five studies per day—twenty-five per week—and as considerable of this was work in a laboratory where it required two hours to gain one credit, it was not unusual to find students who were busy in class room or laboratory from eight o'clock until five or six in the afternoon, excepting a recess of an hour for dinner. The members of the faculty all realized that this mode of procedure was a great mistake—it was too much stuffing with too little time for digestion.

No department was willing to yield anything unless every one was required to give up something. In 1911, after a committee had labored two years or more at a very disagreeable task, the daily program in each of the divisions—agriculture, engineering, home economics—showed four subjects per day, twenty per week, requiring the average student to take less in quantity but more in quality. It is still an open question whether there may not with profit be a still further reduction.

As the number of students and teachers increases, the different kinds of instruction are more and more subdivided.

I note an example:

In 1890, the division of agriculture contained departments of: Animal

husbandry, dairy husbandry, farm crops, farm and horses, farm mechanics, poultry, soils, horticulture and forestry.

The department of animal husbandry since the appointment of Dr. Miles, the first professor of agriculture, has continued to receive attention, the students learning the good and weak points of horses, beef cattle, sheep and pigs.

With the advancement of knowledge all along the line pertaining to agriculture, it became impossible to give instruction and suit everybody in any one course of study. Michigan is well adapted to dairying. It is a growing industry and profitable. Professor C. D. Smith saw this clearly in 1893 and none too soon began the work. He provided for elective studies in this branch of agriculture.

With increased attention to farm crops all over our country by study and experiment, this College began, seven years ago, to recognize the demand for elective work in this line and provided a department of agronomy.

The same was emphatically true of soils and ample provisions were made to fill this demand. Professor Jeffery was secured and he began the work with his advanced ideas.

Agriculture in Michigan has long since passed the pioneer stage, when good men could be employed at twelve dollars a month including board. With fields cleared of stumps and stones and the scarcity and high cost of labor, the use of farm machinery was more economical. With the scarcity and cost of timber, the construction of fences and buildings was revolutionized, the age of steel and cement had arrived. A department of farm mechanics was needed and it was provided.

As grains and meat rapidly increased in price there sprung up a demand for systematic instruction in the production of poultry for furnishing eggs and meat. To meet this demand, the work begun in earnest in 1906. Long before the departments of dairy, farm crops, soils, farm mechanics, poultry were well established, there was a demand for thorough instruction in horticulture. With the neglect of orchards, the rapid increase of worm and scab, scald and blight the state was rapidly losing its reputation and people were beginning to eat bananas from Cuba and oranges from California, in place of good apples, pears and Michigan grown grapes. None too soon did Michigan take notice of these conditions and set about a much needed reform which is now, 1913, well underway.

FORESTRY DEPARTMENT.

The inexhaustable supply of timber was in time found to be fallacious. Through the slovenly methods of lumbermen, the reckless waste by fire, as the supply of timber rapidly diminished—a few people began to call the alarm, even while to the average farmer there seemed to be no danger. To aid in inducing better methods, forestry was made a department.

In 1882, when Dr. Beal ceased to attach to his name "Professor of Botany and Horticulture," it became "Botany and Forestry;" not that he was to push forestry along as an equal to botany, but to keep it in hand as a nucleus for a professor of forestry, when one should be appointed. So far as teaching was concerned, it consisted mainly of a course of lectures for one term in the year, continuing for twenty-one years.

In 1902, stimulated by Hon. C. W. Garfield, '70, the State Board established a "school of forestry." One of the professors was sure the Board did not intend to create a new school, that the work was not to be so strong

as that, that the Board did not know just what they wanted. When questioned, the president of the Board replied, "We intend to make the school of forestry as distinct as either the school of agriculture or engineering."

The following was written by J. F. B., in the *Junior Annual*, class 1911:

"Dr. Beal first started to plant an assortment of tree species in 1875, thirty-eight years ago, 1913, on two acres just northwest of the present site of the post office, which is now known as the Arboretum. Few men are allowed the privilege of planting chestnuts and acorns and of watching them develop through the years, to commercial dimensions. In 1880 Dr. Beal made large plantations of different species of forest trees at the Grayling and Au Sable Experiment Stations. These, to a large extent, have demonstrated what species will and will not do well on the sand plains of the northern portion of the state.

"On December 11, 1894, the following resolution was passed by the State Board of Agriculture: 'Resolved that it is the policy of the Board to place the forest area of the college farm in such a condition as to illustrate, as far as possible, the most advanced methods of properly handling woodlands for continuous and lasting profits and that the professor of agriculture, with the advice of the professor of forestry, is hereby authorized to promptly take the measures necessary to as quickly as possible put our woodlands in creditable condition.' Thus there was set aside as a working field, 193.6 acres of the college farm, where the students could observe the different phases of forestry work.

"During the spring of 1896-7, Dr. Beal planted the white pines on the area across the road from the extreme eastern portion of the college farm, now known as the Pinetum. This small patch of forest has many object lessons and should be preserved intact for all time, if for no other reason than to stand as a living monument to the labors of the man who may be justly called the Father of Michigan Forestry. He has been to the state of Michigan what Heinrich Van Cotta was to Saxony."

MINISTERS' CONFERENCE.

The first ministers' conference was held July 12-16, 1910, with sixty persons in attendance and was a success from every point of view. The subjects of horticulture and poultry and rural progress were prominent topics. A second conference was held a year later, in 1911.

MAKING AGRICULTURAL EDITORS.

Of the alumni engaged in agricultural editorial work in 1912 might be mentioned Herbert M. Collingwood, '83, of the *Rural New Yorker*; M. G. Kains, '95, of the *American Agriculturalist*; Burt Wermuth, '02, of the *Michigan Farmer*; H. E. Young, '02, of the *Farmers' Review*; C. P. Reynolds, '01, of the *Prairie Farmer*; G. C. Seevey, '03, of the *Orange Judd Farmer*; A. J. Anderson, '05, of the *Ohio Farmer*; and E. B. Reid, '08, of the *Oklahoma Farmer*, with Byron D. Halsted, S. M. Tracy, C. C. Lillie, Don H. Kedzie, and others who are now editors or were at one time.

The catalogue for 1909-10 announces a course known as English 2k for a limited number of selected agricultural seniors who are especially interested in learning to express, in simple, accurate, effective English their ideas concerning technical subjects.

Concerning the importance of a course in agricultural journalism, Morris

G. Kains, '95, of the American Agriculturist, wrote the M. A. C. Record, January 2, 1912, giving encouraging advice:

"My chief regrets in connection with my college work, both at M. A. C. and at Cornell University, are that I had insufficient English and no training in journalism of any kind. What I learned was by tedious experience and a dreary series of blunders. Doubtless had a course in journalism been given at the College I might have taken it, because I had my nose pointed toward experiment station and college work. All my training has, however, fitted me for my present work, which I now see was really far better suited to my make up than any college or experiment station position could have been.

"Let no man hesitate as to the opening for agricultural journalistic work. There are over 400 agricultural papers in this country, most of them inferior. But there are plenty of good ones. What is needed is the man who has had some experience.

"The student should be able to place articles with the agricultural papers, and thus introduce himself to the editor. What does count is the character of his copy. If this shows that the man knows how to pick out what is helpful, newsy, progressive, and how to come straight to the point in telling his story, his copy will always be welcome, and he will be paving the way for any position that he may later desire to fill.

"Too much importance cannot be attached to familiarity with present-day and future-day topics that interest, or will likely interest, farmers. Parcel post, good roads, consolidated schools, teaching agriculture in rural schools, cooperation, the grange, and a hundred other topics, may well occupy his spare time for reading, discussion and argument with men who know more than he thinks he does. Every opportunity he can get to talk with a stronger man should be embraced. Attend every meeting of farmers' organizations that he can; visit all sorts of factories where goods are made for farm use; attend fairs; read especially the editorial pages of the best agricultural papers, and some of the broadest dailies."

From year to year the College is becoming more and more a central place for holding conventions of all sorts where agriculture, in the broad sense, is the leading feature.

As secretary of the Michigan Improved Live-Stock-Breeders' and Feeders' Association, Professor A. C. Anderson, during the year 1908, prepared a live stock directory of the state, which at present (1913) contains the names, post office addresses, and classes of stock reared by over six thousand three hundred farmers, stock men and feeders, of Michigan. This more complete directory will be of great assistance in extending the influence of the breeders' association and in promoting the improvement of live stock.

During the past year, 1913, Instructor G. A. Brown, the secretary of the above association, has acted as an agent or medium of exchange between buyer and seller and, by this means, has helped to place much of the surplus pure-bred stock where it is much needed.

About the middle of January, fourteen breeders' associations met at the College. In 1912 there was an exhibit of fat swine viewed while living, butchered and cut up for examination on the day following. In 1913 there was an exhibit of fat lambs viewed in a similar manner.

SHORT COURSES.

In his report for 1892, President O. Clute refers to talks concerning a short winter course at the College. Former reference has been made to a

short course in the summer, as early as 1872, for eight students in chemistry; the writer refers to six or eight instructors at the College who took special work in botany during a portion of one winter vacation about 1903.

In 1910, special students in short courses were taught in nine different kinds of subjects:

Corn Production, one week	32 students
Creamery, first year, six weeks	42 “
Creamery, second year, six weeks	4 “
Dairy, one week	65 “
Fruit Growing, four weeks	32 “
General Agriculture, first year, eight weeks	127 “
General Agriculture, second year, eight weeks . .	40 “
Poultry, eight weeks	32 “
Swine, one week	10 “
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	388

A short course in dairying was inaugurated by Professor Smith in 1894 with seventeen students in attendance for six weeks. The next year the number of students increased to thirty, and gradually other short courses crept in and proved profitable and popular till, in 1911, these courses accommodated 321 students distributed in general agriculture, creamery, poultry, fruit and cheese making. The time for some of these has been increased to eight weeks, and in some topics, courses more advanced have been adopted for a student in a second year.

On February 25, 1897, the Board adopted the following:
“Resolved, That the faculty of the College is hereby requested to consider the feasibility of giving a short summer course in normal instruction along agricultural lines, adapted to the use of teachers in rural schools, and report to the Board at next meeting.”

No action was taken to carry out the provisions of this resolution until fourteen years later, in 1911.

In 1897 the Board of Agriculture called the attention of the college faculty and council of the station to the desirability of putting into book or pamphlet form lessons in familiar science as applied to rural occupations, to be used as reading text for advanced classes in our rural schools.

In response to this request, Dr. Beal prepared nine bulletins on elementary science, which were well received. 50,000 copies of each were printed, of which 30,000 were left in the hands of the superintendent of public instruction for distribution. No other members of the faculty responded to the request.

The two-years course in agriculture, an outgrowth of the short courses, began in the fall of 1913. This course provides instruction during fifteen weeks of the winter months, during two years.

RESIDENT GRADUATES.

For many years there have been some resident graduates in attendance working for a second degree. There has been no special provision made nor had there been a dean to systematize and encourage the attendance of this class of student; besides the faculty have had all they could do with teaching students in the four year courses and also during portions of the year, students in the short courses.

THE GRADUATE SCHOOL OF AGRICULTURE.

Beginning at Ohio University, in the summer of 1904, a school was held for four weeks, intended especially for teachers and experimenters, the instructors chiefly coming from various land-grant colleges. This school is migratory, and so far has been held once in two years, four others have been held, one at Illinois, one at Cornell and one at Iowa. The fifth session was held at the Michigan Agricultural College, beginning July 1, 1912, in the Agricultural Building, Secretary A. M. Brown, Registrar; Dr. A. C. True, of the Office of Experiment Stations, Washington, D. C., Dean.

This school was in session during four weeks; is held once in two years at some Agricultural College and is managed chiefly by Dr. A. C. True of the U. S. Department of Agriculture.

A school of home economics held at the same time and place was presided over by Mrs. Alice P. Norton of the University of Chicago.

Engineering Division.

In 1885 when Hon. Edwin Willits was invited to become president, one of the conditions of his acceptance hinged on an act of the Board of Agriculture establishing an engineering division.

The Morrill Act of 1862, provided for instruction in mechanic arts (engineering) as well as in agriculture. Why a course in engineering was not established at once, after the provisions of this act had been accepted by the state legislature, President Abbot tells in an address given on another page.

Engineering of a kind was contemplated at the very establishment of the College and certain branches of engineering study were authorized in the first curriculum, nearly six years before the national land grant.

At the meeting of the board of education on Dec. 2, 1856, instruction in English, mathematical and scientific courses were ordered. "The mathematical course shall include algebra, geometry, trigonometry, surveying, agricultural engineering, drafting, natural philosophy and book-keeping."

On Oct. 22, 1857, the Board "Resolved, that Professor C. Tracy be authorized to purchase a surveyor's compass and level, with the necessary apparatus for surveying and leveling, for the use of the Agricultural College."

On April 6, 1859, it was "Voted that Mr. Cleveland Abbe be employed as tutor in the Agricultural College to teach civil engineering, etc."

Subsequent to the passage of the Morrill Act of 1862, the recognition of mechanic arts was officially considered by the Board of Agriculture from time to time, but not until 1882 was active interest shown.

On March 14, 1882, "It was resolved that Mr. Reynolds and Professor Carpenter be a committee to take into consideration the feasibility of establishing a mechanical department in the College and to suggest plans and make estimates for the same."

The matter was then dropped and not revived until the election of the Hon. Edwin Willits as President of the College in 1885.

On Jan. 8, 1885, it was "Resolved that Lewis McLouth be and is hereby appointed Professor of Mechanics at the Agricultural College with a salary at the rate of two thousand dollars a year, salary to begin July 1, 1885, provided that the estimates made by this board to the Legislature for the establishment of a mechanical department are approved and an appropriation made."

The legislature appropriated \$7,800 for a building, with which was con-

structed the major part of the present shop building from plans prepared by Professor R. C. Carpenter.

The purpose of the Board was to establish: "a first class school of technology in which shall be taught the principles upon which the leading industries of the country are based, with a full line of instruction in the use of tools and the construction of mechanical products, according to the best approved plans of such institutions in this country and in Europe. Special facilities will be furnished for instruction and practice in free-hand drawing and in draughting, and in experimental physics, with unexcelled advantages in those branches of mathematics and the sciences involved in scientific mechanics. Daily work will be required in the shops. Instruction will also be afforded in the English language, book-keeping and the business law, so that each student shall be well fitted by a general and business as well as a technical education for any position he may seek. The requirements for admission shall be the same as for the other departments of the college.



First engineering laboratory and shops.

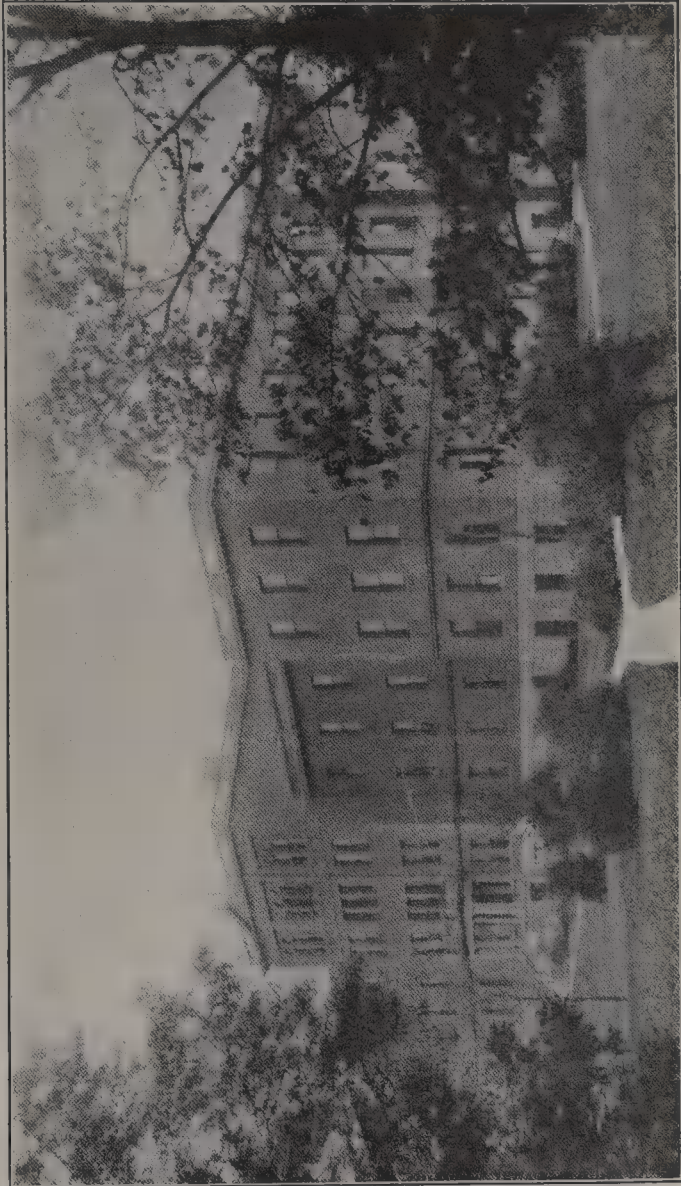
"Circulars with full course of study and full explanation of the work to be done will be sent on application on and after July 15th, next."

At the opening of the next school year, September 1885, about 40 students enrolled in the "mechanical department" as the new course was called.

In the meantime President Willits and Professor McLouth had visited Worcester Polytechnic Institute and other institutions for information upon which to build a curriculum and to plan the material equipment for the new work.

In 1888 the first graduates, three in number, from the Mechanical department received their diplomas. In 1889 the course was designated as a course in mechanical engineering and an alternative five-year course was authorized for the benefit of students to whom the advantages of a complete high-school preparation were not available. In 1901 the course was designated as the "mechanical course" and the options in civil engineering in the junior and senior years were offered to those who wished to prepare for work in that field. In 1906 the catalogue contained, for the first time, options

in electrical engineering. In 1907, the present designation, engineering course, was adopted, and the professor of mechanical engineering was constituted the dean of engineering. In 1909, mathematics and civil engineering were made separate departments and the division of engineering was formally organized to include the departments of civil engineering, drawing and design, mechanical engineering, physics and electrical engineering.



Woman's building erected in 1900.

In 1907, the new engineering hall was occupied by the departments above mentioned and the old building was converted entirely to shop purposes. In June, 1908, at the commencement time, engineering hall was formally dedicated, the address being given by Professor R. C. Carpenter of Cornell University. In June, 1910, the completion of a quarter century of the engineering course at the College was suitably observed by a special reunion of graduates and former students of the course.

Since the establishment of engineering at the college there have been graduated from the course 550 men and many times that number have taken the partial courses. Since the introduction of optional work in civil engineering a majority of upper classmen have elected to take that work.

Division of Home Economics.

The importance of education for girls has long been receiving more and more attention with the passing years.

In 1849, Hon. E. H. Lothrop, in an address before the State Agricultural Society in Detroit, thus speaks regarding home economics for women:

"As I have impressed strongly on those gentlemen who have sons, the importance of educating them thoroughly in the business in which they are destined to follow, let me say a word to you who have daughters. In addition to a daily and thorough training in the care and labor of the dairy and all household affairs, educate them in everything that will have a tendency to make them plain, modest, sensible, and useful women and fit companions for those of our sons who shall become scientific and practical farmers. Teach them that industry is honorable and adds to their charms, and that the domestic circle is to be the theater of their future fame and glory."

Next came the attention to co-education. Girls and boys had "always" attended common schools together. They had met in the same classes, in academies and seminaries, and normal schools. Oberlin College opened her doors to women as well as men, including negroes, in 1833.

After making many, many inquiries and discussing the subject from all sides, the regents decided, in 1870, to open the doors of the University, giving women the same privileges as men. One woman attended the first year, from February, 1870, to commencement, and in the fall of 1871 thirty-four attended. In 1871, Amanda Sanford, a former student of the writer, was graduated from the medical school of the university.

Although the Agricultural College was established apparently for teaching young men in the science and art of agriculture, with very little noise about it, ten women, the first ever admitted to the College, were in attendance in 1870, beginning February 23.

I give their names:

Isabel Allen, Lansing, Mich.
 Catherine C. Bacon, Lansing, Mich.
 Ella Brock, Lansing, Mich.
 Mary E. Daniells, Wacousta, Mich.
 Harriet A. Dexter, Ionia, Mich.
 Gertrude Howe, Lansing, Mich.
 Emma H. Hume, Medina, Mich.
 Mary L. Jones, Lansing, Mich.
 Elizabeth E. Sessions, Ionia, Mich.
 Catherine E. Steele, North Henderson, Illinois.

In his report for 1870, President Abbot has the following to say concerning ladies as students.

"Applications for admission of ladies have been and still are frequent and urgent. The faculty admitted a few, who occupy rooms of the floor of the steward's family, or in private houses. They studied chemistry, botany,

horticulture, floriculture, trigonometry, surveying, entomology, book-keeping, and other branches. Their progress in study was rapid and their improvement marked.

"Work was furnished them when it could be; they prepared seed for the ground, cut potatoes, transplanted tomatoes and flowering plants, pruned shrubbery, gathered small fruit, did some work in the greenhouse and many other kinds of work.

"The experiment of having women as students has worked so successfully that there would be no hesitation in admitting them if there were a hall for them."

The next is from President Willits in 1886:

"Many ladies would find our course of study agreeable and useful. They would find a knowledge of scientific principles comprising as much additional interest and delight to them in the practice of floriculture, the care of gardens, ornamental shrubs, and orchards, in the operations of the kitchen, and in their general reading, as it does to men. Women are frequently left in circumstances where they would highly prize some knowledge of agriculture.

"The applications of chemistry to women's work are so many that a half year's course of daily lectures would not be too long a one. Among these applications are, cooking, preserving of fruits, utilization of materials usually wasted, cleansing by acids and soaps, bleaching, manufacture of soaps of different kinds, disinfection, fermentation, and neutralization of poisons. A course of lectures in dairying is now given every year.

"Women are turning their attention more and more to studies such as are taught here. Some would like the out-of-door labor, some the aid which the compensation for their labor would afford them in acquiring an education; and it is to be regretted that they cannot avail themselves of the same privilege here that is offered the young man.

"A strong pressure comes from many quarters for accommodations for ladies. Now that the College is open to them, it amounts to a practical prohibition. We have twelve lady students who find rooms with the professors, or come from their homes daily from the surrounding country. I believe that it is desirable that the number be increased."

The preceding paragraphs give us no intimation of what came later by way of instruction in cooking, sewing and other things known as home economics.

With a few scattering years of interruption, women have attended the Agricultural College ever since the year 1870.

PRACTICAL EDUCATION FOR YOUNG WOMEN.

The following on practical education for young women is by Mrs. Perry Mayo of Battle Creek, long a leader in the grange. This was given about 1894. It matters little because she spoke in a similar manner previous to this date and often for more than fifteen years.

"Hon. John A. Anderson, a former President of Kansas Agricultural College, said, 'A girl has a right to an education as precisely adapted to woman's work as is a boy's preparatory to man's work.'

"What is woman's work? By a wise and supreme law a majority of young women are destined to become wives and mothers; to establish and keep the home, care for it, work for it, live for it, and for this most important work they should be carefully, thoroughly, competently trained. As to the advisability of such a training there can be no question.

"One of our greatest needs is better homes, better fathers and mothers;

fathers who realize the responsibilities of fatherhood and are fitted for them; mothers who are conscious that the crowning glory of their lives is motherhood and that their greatest concern shall be to make wise, true mothers; who shall be able to give to their children strong bodies, clear brains and natures capable of grand development.

"Most parents are anxious that their daughters shall receive something of an education. They attend the common schools and pass to the high school, choose a course of study, graduate. They take Latin, French, German, mathematics, astronomy, music, and history, all excellent for mental development. Most of these young women are daughters of laboring people and expect, upon graduating, to earn their living. How many of these graduates are thoroughly fitted for any one thing that shall win for them food and shelter? A few may teach, many go into shops, factories, offices and some as domestics, all unskilled. Many marry, and frequently men with small incomes. How many know from practical teaching how to care for a home, to manage in a wise, prudent manner the small salary and keep the family comfortable, healthy and happy? They must manage, must cook, must work; but at what a great disadvantage, without any previous preparation. Miss Sill, a professional cook says, 'One-third of the food in the average family is wasted for lack of knowledge in managing, saving, and properly cooking.'

'If our young women were thoroughly skilled in cooking, physiology, hygiene, the proper care of children and the home, many of the social and poor problems would be solved.

"There are no reasons why young women should not receive training in dairying, floriculture, landscape gardening and horticulture, if they desire it.

"Thinking parents of to-day are anxious that their daughters shall be as thoroughly trained for the practical work of their lives as their sons. They know that the life that is before them will be intensely practical, and for it they must be prepared. Demands will be made upon them for skilled hands and trained minds that they may be masters of their work and not slaves to it.

"If they should never assume the duties of home and its responsibilities, let them at least be so educated as to be self-sustaining. We expect it of our sons, we demand it; why not of our daughters?"

From a supposed debate at Wolf Creek, by James Y. Clark, '85, October 1, 1883, appeared in the Speculum:

"The boys no more are rough and rude, their actions have a manlier tone Than when, as in the days of yore, we fellows 'ruled the roost' alone.

And now, kind friends, advice to you, I'm sure you'll take quite kindly; Look at this matter, fair and square, not as before, so blindly.

Do you not see, your daughters can, with only half the meagre chance You give your lazy, worthless sons, the broad domain of Truth advance; And so, to give the State's fair school the honor that is due, You'd better send your sons out there, and send your daughters too."

The first woman to graduate (1879) was Eva Diann Coryell (Mrs. William Mc Bain), Grand Rapids, Michigan.

A course in home economics for the instruction of women was established in 1895, making use of Abbot Hall as dormitory and laboratory for cooking, sewing and calisthenics.

For long years previous, the education of women in home economics in con-

nection with other subjects had been advocated by large numbers of members of the grange, professors in colleges, and others.

A bill was introduced in two or three or more sessions of the legislature, previous to the one making small provisions for beginning the work. Why did not the first bill or the second one pass? The committees of the senate and house found out that some members of the State Board and of the faculty were opposed to co-education, at least at M. A. C.

Apparently for the sake of economy, legislators are always pleased to find some excuse for lopping off something from the estimated cost.

They reasoned in this way: as there is a difference of opinion on the matter, by those in connection with the College, we have a good reason for cutting out that portion of the bill to make provisions for a department of home economics. But in a case like this nothing can stop the avalanche of public demand.

Concerning domestic art, I quote Mrs. Jennie L. K. Haner, in the M. A. C. Record of May 14, 1901.

"This consists in manual training, or the developing of dexterity and skill in needlecraft. First, general instruction is given, regarding the materials and implements used; thread, needles and pins, thimble, scissors, tape measure, emery, etc., followed by a few general rules regarding the positions of the body and the most economical expenditure of its vital force.

"During all the course care is exercised in the training of judgment, by sight and by mind, of taste, appropriateness of beauty and utility, always keeping first in thought the greatest usefulness for which each thing is intended.

"Does it pay? Yes, for anything which helps the young woman to the larger and fuller development of her powers along the idea of true education and true womanliness makes her a better, nobler, more useful member in the great society in which she is obliged to live, and we can say that sewing, dressmaking, art needlework, millinery, cooking and manual training in all its forms do help a girl to become a good girl, a better woman and a more useful citizen."

THE SENIOR WOMEN.

Not only do young men in agriculture, horticulture, forestry, engineering, visit fairs, meetings of societies, factories, to gather points, but the women as well, visit bakeries, the kitchens of hotels, condensed-milk factories; in May, 1909, one class went to Saginaw, East and West Sides, to take notes on teaching domestic art and domestic science in the schools.

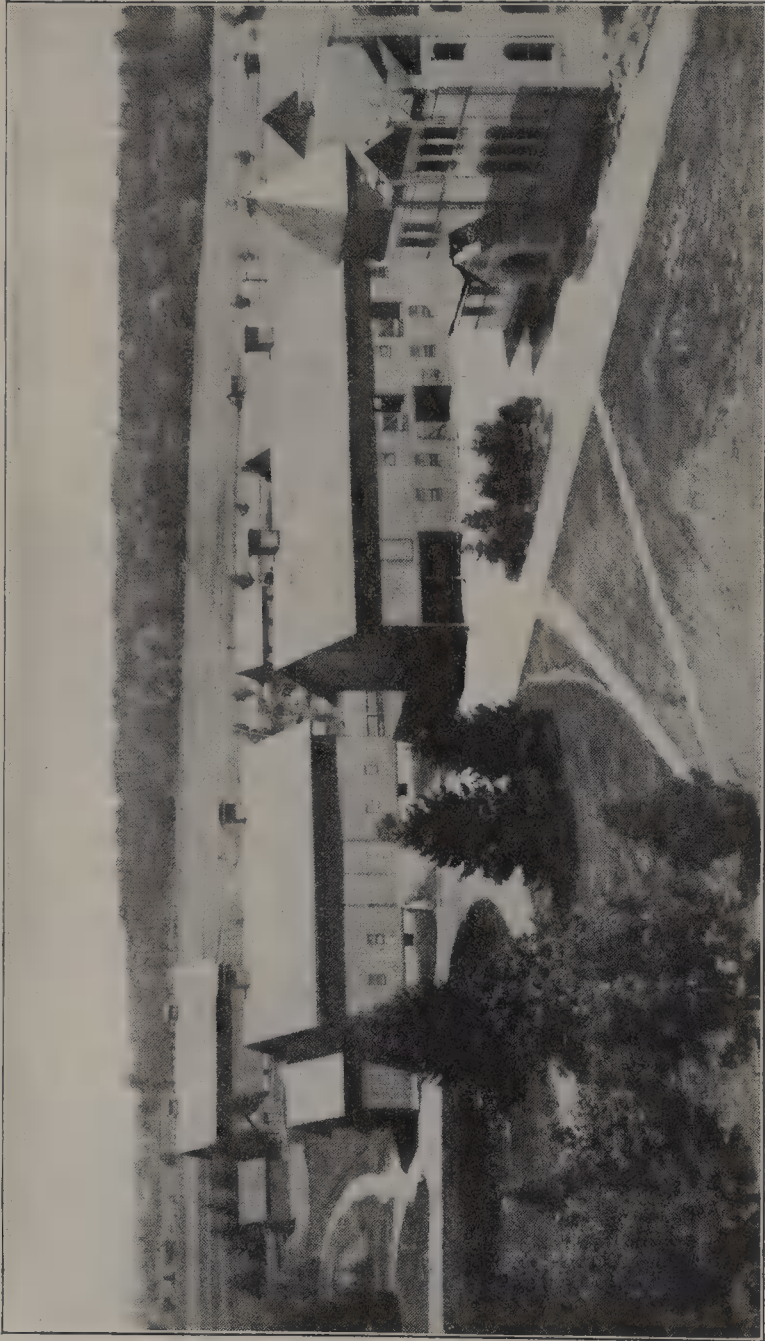
Edith Richert, for the Ladies' Home Journal, asked large numbers of alumnae, where the college failed with girls. In the summary of replies, occurs this statement: "Domestic science, in the broadest sense of the term, which includes cooking and dietetics, sanitation, the management of the household, home economics and the various domestic arts. is the subject which has been most keenly missed by the largest number of the alumnae."

In planning the courses of the division of home economics at M. A. C., the committee cannot be criticised in this particular. The aim is to train for efficiency in the duties of home life.

Co-education at M. A. C. has proved a successful venture, notwithstanding the oft-repeated statement of President Snyder, that nothing in connection with the College brings up more perplexing problems, and those continually, than the presence of women at this College.

The Division of Veterinary Medicine.

In his second report, December 1, 1858, President Williams observes that "A veterinary professorship is fundamental to the very idea of an agricultural college."



LOOKING EAST IN 1886.

At the right, first veterinary laboratory, 1885; next, horse barn; the farm office in the south end, built by Dr. Miles; next on the left, the old barn built in 1862, while Professor Fisk was acting president; projecting to the left, the second silo built by Professor S. Johnson; a little to the left and beyond, the grain barn containing a basement silo, the first one at the college, built by Prof. S. Johnson.

Sometime along in 1874 and later, Hon. R. E. Trowbridge, a former member of congress and then the first Master of Capitol Grange, of Lansing, lived on the farm of United States Senator Zachariah Chandler, situated about three miles due north, across the marsh, from the College. He was fond of good

horses and cattle and began to talk of the need of some one at the College to teach veterinary science. Lecturing frequently at granges, farmers' clubs, and live-stock associations, as time went on, he urged the project with much force. To a limited extent Dr. Miles touched occasionally on the accidents and diseases of domestic animals. In teaching comparative anatomy and physiology, Professor Cook covered a part of the ground of veterinary science. In 1881, we find in the catalogue the name of A. J. Murray, V. S., Lecturer in veterinary of the Agricultural College, lecturing to the senior class, every week for one-half of the summer term, a period of about six weeks. Although the next year no one appears in the catalogue under that title, Dr. Murray gave a short course of lectures the same as during the previous year, and the next year a blank line appears over the words "Veterinary Science." In 1883 Professor E. A. A. Grange, V. S., taught a whole term of veterinary science. Beginning the next autumn, he taught during all the three terms of the senior year.

From 1885-97, Dr. Grange was also state veterinarian; at the latter date he resigned to become dean of the veterinary department of the Detroit College of Medicine. He was succeeded, 1897, by George Alfred Waterman, B. S., M. D. C., a graduate of the College in 1892, and later a graduate of Chicago Veterinary College.

Dr. Waterman filled his position at M. A. C. with eminent success, but chose to resign in 1907 and move to his farm at Ann Arbor, where he makes a specialty of raising high bred cattle.

Dr. Leslie Milton Hurt, D. V. M., graduate of Iowa State College, was appointed, September 1908, to succeed Dr. Waterman and served until January 1, 1910, when he resigned. Professor Waterman lectured in veterinary medicine to the short course students and some others, during the winter term of 1910. Dr. Ward Giltner completed the work of the year.

The present division of veterinary medicine had its origin in the act of the state legislature approving Public Act 97, May 22, 1907, which is entitled "An Act to Provide for the Establishment of a Department of Veterinary Science at the M. A. C."

"The people of the State of Michigan enact: Section 1. The State Board of Agriculture is hereby authorized and empowered to establish a department at the Michigan Agricultural College to be known as the Department of Veterinary Science."

"Section 2. The said State Board of Agriculture may provide suitable accommodations for class and demonstrating rooms; may appoint such professors of veterinary science and such tutors, demonstrators and other instructors as may from time to time be necessary; may furnish all necessary apparatus and appliances for the study of veterinary science; may prescribe and regulate the course of study; may make such rules and regulations as may be necessary, and may grant to each student satisfactorily completing the prescribed course of study a diploma and confer upon each such student the degree of Doctor of Veterinary Medicine."

Subsequent action by the State Board of Agriculture on October 21, 1909, authorized a veterinary course in connection with this institution, under the designation of the Veterinary division.

This action on the part of the Board marks another milestone in the effort to make the College serve the highest interests of the state.

In the fall of 1910, Dr. Richard Pope Lyman, B. S., M. D. V. (Harvard), was appointed as dean of the division of veterinary medicine and professor

of veterinary medicine, and at once undertook the organization of the new school.

Students were admitted to the freshman and sophomore years of this course for the first time during the college year 1910-1911. It is the aim of the new division to maintain a college of veterinary medicine with the highest ideals and to train its students to be veterinarians competent to recognize, cope with and suppress all animal ailments or plagues, and so aid in lessening the diseases among animals, as well as cooperate in the protection of human health and life against diseases of animal origin. It almost goes without saying that such work is one phase of agricultural education, and should be developed and carried on under the auspices of this institution.

The State Board of Agriculture will confer the degree of Doctor of Veterinary Medicine (D. V. M.) upon candidates who have successfully pursued the course as outlined in the curriculum. The work of the division is of especially high character, and the course of study covers a period of four years of under-graduate work.

The instruction includes courses in anatomy, animal husbandry, bacteriology, hygiene, pathology, botany, chemistry, surgical and medical clinics, dairy husbandry, English, entomology, farm mechanics, veterinary medicine, pharmacology, physiology, surgery, zoology and zootechnics.

Division of Science and Art.

For the purpose of bringing these four divisions into closer relation, the division of science and art was established at the same time as the veterinary medicine but there is no intention to offer courses in those topics leading to a degree.

Departments of botany, chemistry, entomology, zoology and bacteriology are to some extent independent of the divisions above given but each renders very essential aid in teaching the sciences that pertain to agriculture, home economics and veterinary medicine.

CHAPTER X.

COLLEGE EXTENSION WORK.

As applied to Michigan Agricultural College, extension work refers to all efforts made to help people who are not in attendance at the college, whether the topics are in line of agriculture, engineering, home economics, forestry, veterinary or any other pursuit whatever. John Hamilton of the United States Department of Agriculture enumerates thirty-four lines of extension work:

LIST OF EXTENSION ACTIVITIES.

- Conducting or assisting in farmers' institutes.
- Equipping and conducting demonstration trains.
- Organizing and carrying on movable schools of agriculture.
- Conducting correspondence and reading courses.
- Providing and installing exhibits and agricultural demonstrations at state and county fairs.
- Carrying on field demonstrations.
- Conducting farm inspection work.
- Delivering lectures and conducting demonstrations in farm management.
- Lecturing on highway improvement.
- Organizing and conducting corn and stock judging contests.
- Holding district short courses in agriculture and domestic science.
- Lecturing before special-subject institutes.
- Analyzing commercial fertilizers.
- Inspecting nurseries.
- Conducting demonstration work on county poor farms.
- Sending out peripatetic expert advisers.
- Organizing boys' and girls' clubs.
- Preparing bulletins for the press.
- Public school lectures and demonstrations.
- Conducting boys' encampments.
- Cooperative work with high schools.
- Lecturing at educational and agricultural conventions.
- Holding conferences on rural progress.
- Conducting pruning and spraying demonstrations.
- Organizing breeders' associations and clubs.
- Conducting agricultural surveys.
- Lecturing before county teachers' associations.
- Lecturing before county agricultural societies.
- Giving courses of lectures on rural betterment.
- Conducting school garden work.
- Organizing farmers' clubs.
- Organizing corn improvement associations.
- Cooperating with boards of trade in marketing produce.
- Cooperating with the Y. M. C. A. associations in social betterment.

To this list I add demonstration and lectures in cooking, management of children or any other feature of household economy. Of this number of lines of work or similar work Michigan has undertaken at least thirty-five, and lack of adequate means is the only reason why the college is not quadrupling the force to attack new phases of these problems and other problems with greater energy.

At this stage of the game I hardly need to refer to an idea prevalent twenty years ago and earlier in some quarters that the chief work performed by the Agricultural College is teaching such people as may come to the college for a longer or shorter course of study. The truth is that the Agricultural College does, and legitimately too, a vast amount of work which has nothing to do immediately with the students within its walls, but which is designed primarily for the benefit of those who cannot, or will not, come to the College as students. In the words of Dr. Eugene Davenport: "The Agricultural College has developed from a narrow technical school for individuals of a single class into a public service institution of the widest scope and the greatest magnitude."

Of all these methods of extension teaching I place the *institute* first as it gradually leads up to all other forms.

As John Hamilton says,

"Until the institute came, the ordinary farmer had no school of instruction to which he could go for information respecting his calling. In most instances he had no knowledge of what was doing for the benefit of agriculture." The institutes have the advantage over bulletins and reading courses in that they bring live men and women face to face where they can ask questions, talk back, gain enthusiasm and form new resolutions.

In 1875 the college was still small, little known and unpopular, and to secure a small appropriation from each legislature was a difficult proceeding. Members of the faculty frequently discussed the subject and all agreed that something should be done to relieve the strain. Dr. Miles had previously given a course of lectures at the Agricultural College of the University of Illinois, then known as the Industrial University, where at the initiative of Regent J. M. Gregory, a former Michigan man, they had inaugurated each year for four years a series of farmers' institutes with excellent results. President Abbot was willing that the faculty should undertake the work in Michigan, but for his part he didn't know that he could do anything about it. A committee was appointed consisting of Dr. Kedzie, Professors Beal and Carpenter to perfect plans and with the approval of the State Board of Agriculture to go ahead the following winter, 1876 and '77. The amount of money at our disposal was very small, \$300 per year, I believe, for conducting six institutes. We practiced the most rigid economy. Several of us thought that if the plan for six was a good thing, more would be still better, but Dr. Kedzie was confident that if we went beyond six or eight a year the work would soon be overdone and farmers would lose interest. The plans for conducting our institutes were essentially copied from those of Illinois. Details of management and new points were industriously studied and improvements came with experience.

Two institutes were held, the first beginning on January 11, 1876, and each continued for two days with five sessions. One was held at Allegan, the other at Armada. This inauguration of farmers' institutes was one of far-reaching and striking importance. It was one of the milestones of progress for the Michigan Agricultural College.

During the years from 1876 to 1889, inclusive, the number of institutes

for each year remained the same. The six meetings were scattered over the state, involving the expenditure of larger sums for traveling expenses than would have been necessary had they been located on the lines of connecting roads and within very easy reach of each other.

In 1890 it was thought best by the Board to try and connect the institutes in series, thus making the appropriation go farther in the way of expenses, and possibly hold double the number. Through considerable effort and correspondence, the committee having institutes in charge located four in the east, four in the west and three in the northern part of the state. It was found on trial to work admirably. A part of the force from the College opened the nearest institute in a series on Monday evening, going on to open the next on Tuesday evening, and the remainder of the lectures followed up to continue and close the first meeting on Tuesday night. Thus four institutes could be held in the same week, if they were not too far apart, and close up the work on Friday night ready to return on Saturday.

The experience of this year was so satisfactory that sixteen institutes were planned in 1891, and successfully conducted, the expense, however, exceeding the appropriation by a small amount. A larger appropriation was asked of the legislature then in session, and was granted, so that in 1892 twenty short institutes were held, and two long ones each continuing four days.

It is well perhaps in this connection to show what was appropriated by the state for the expenses attending the holding of the 116 institutes for the sixteen years. In 1877 the legislature appropriated \$500; in 1879, \$600; 1881, \$600; 1883, \$600; 1885, \$600; 1887, \$600; 1889, \$1,500, a total of \$5,800. The average expense for each institute was \$50.

The farmers where an institute was held furnished the hall and did most of the advertising. A member of the faculty was selected to visit the people where the institute was to be held, and in a measure supervised the program.

Experience taught that most farmers could attend day sessions better than evening sessions. In January, '80, the institutes began in the forenoon, continued during the afternoon and evening and the next day closing with an afternoon session.

In 1890 eleven were held in three groups, western, northern and eastern with reference to economy of time and travel of those who lectured.

Beginning in the summer of 1895, a law came into effect establishing an institute system, making an appropriation therefor and placing it in the hands of the State Board of Agriculture. Kenyon L. Butterfield was appointed Superintendent of Institutes, with an appropriation of \$5,000 per year at his disposal. He conducted institutes with marked system, economy and thoroughness.

To secure a farmers' institute, application was made by officers of a county institute society, or an active county agricultural society.

In the fall of 1895 and winter of 1896, there were held seventy institutes in as many counties of the state, besides these the plan was inaugurated of holding for four days at the close of the season what was termed a "round-up farmers' institute."

For two winters the plan was tried of renting a large convenient building in which a capable woman lectured in connection with demonstrations in cooking of some important articles of foods. Large numbers attended, more than could possibly witness what was taking place on one range or one gasoline stove.

In 1896, during a portion of the time a woman's section was held, and for

a few years, a mechanical section. It has become the policy of the Board to hold every alternate year, the round-up at the Agricultural College.

In November, previous to the institutes to be held in 1897, there was gathered at the College a conference of institute workers.

Each morning at the round-up, there was held a conference of institute lecturers, and each afternoon after the close of the institute the officers of county institute societies held conferences to discuss methods of advertising, preparing programs and similar topics.

On his second year of supervision, Mr. Butterfield planned a series of one-day institutes in two counties; these meetings to be held in portions of the county remote from the county seat. The expense was moderate, the work highly satisfactory.

Following the one-day meetings of a county came a longer meeting at some central point. This plan proved ideal and has been continued in some counties ever since.

Local exhibits of grains, fruits and vegetables, have often been made. In the fall and winter of 1896-7 there were held seventy institutes with a report of attendance at each session. Mr. Butterfield's third year was the most successful of all with some perfection of plans and additional details. "He broached the feasibility of holding separate sections for women to Mrs. Mary A. Mayo and, upon her approval, asked her to lead the work. When asked how the plan suggested by Mr. Butterfield had appealed to her at first, she said: "My heart just throbbed. It was what I had long wanted to do. He asked me what I would talk about. They were strong subjects that I suggested and I know we discussed the matter of how they would be received but it was decided to try it."

Mrs. Mayo chose for her first topics at these meetings, "Mother and Daughter" and "Making Farm Work Easier." She spoke usually without notes, talking simply and directly from her heart and experience, face to face with those who came to hear her. The results surprised the most sanguine. The meetings for women proved unique and far-reaching.

"Reports show that 5,309 women attended Mrs. Mayo's sections that first year at twenty institutes, including the state meeting. The reports were overwhelmingly in favor of the continuance of the woman's section as a distinct feature of our institute work.

Kenyon L. Butterfield, manager of institutes says:

"The idea of a state round-up was borrowed from the state of Wisconsin, where they have had such meetings for ten or a dozen years. At our first round-up held at Grand Rapids in 1896, we followed the Wisconsin idea, though making a special effort to secure quite a large attendance from all over the state. In this we succeeded fairly well.

"This year, 1897, we decided to strike off from the beaten path and determined to make the round-up something more than an immense country meeting, giving it, if possible, a character which would induce attendance from all portions of the state.

"Our own state lecturers, except in a few cases, did not repeat the lectures which they had been giving throughout the winter, and the program was made up wholly with reference to what seemed to be the demands of the occasion.

"The results of the meeting have abundantly justified our idea, and we are firmly convinced that the Michigan idea of a round-up is the correct one, and one which is productive of the most lasting benefit. Nearly fifty counties of the state were represented, including every county but two in central and

southern Michigan, and many of the northern counties. More than two hundred people came a distance of over 25 miles to attend the meeting. It was a splendid audience, the like of which has rarely been gathered together in the agricultural history of Michigan. We believe it to have been the most representative body of farmers which ever gathered in Michigan to discuss practical farm topics.

"From the institute stand-point, one of the most important features of the meeting were the conferences of institute officers, of whom there were nearly fifty in attendance.

"At these conferences subjects pertaining to the details of institute work were discussed, such as making up the program, advertising, getting members, the woman's section, etc., etc. No sessions of the main institute proper were crowded with more earnest discussions than took place in these conferences.

"There is no question but the round-up helped the College. It has also aided in strengthening our institute system in the minds of the intelligent farmers in the state. We believe that everyone in attendance went back home enthusiastic for institute work."

"For the purpose of getting more young people to attend the farmer's institutes, the superintendent of institutes, in cooperation with the College, has inaugurated a series of contests among high school pupils of the state. The plan is to have the high school pupils attend a full session of the institute in their town. The best report, as determined by a committee appointed by the superintendent of the schools, is sent to the College to enter into competition with reports from other schools. The best five reports as determined by the department of English at the College, will be published and well distributed. The College offers a premium to the most successful competitor; to the person sending in the best essay the Agricultural College will remit room rent for one year; this will amount to about \$15.00 or \$20.00 according to the room chosen."

Quite a number of high schools have entered into these contests and from some as many as 250 pupils have attended the institutes; though, of course, only a few, in each instance, took part in the contest. In all, about 40 pupils wrote reports of the December institute; and about 60 wrote reports of January and February institutes. For some reason, this plan for securing reports was discontinued.

Mr. Butterfield left the work in a high state of perfection for his successor.

In the summer of 1900, on the resignation of K. L. Butterfield, Professor C. D. Smith was placed in charge of farmers' institutes. In his first report Professor Smith said, "An advanced step of no inconsiderable importance was the grouping of counties of allied and similar interests in such a way as to economize the time of the workers and expense of railroad fare and hotel."

For the first time in 1901 the experiment was tried at the round-up of dividing the attendance into three sections, the general farm section, the fruit section, and the woman's section which met each afternoon. One-day institutes were more numerous, Allegan county having held forty-nine of them, reaching nearly every township in the county. At the request of the Political Science Association, a joint meeting was held continuing four days.

After four years, in May, 1902, Professor L. R. Taft, was made superintendent of institutes.

During the season of 1904, Superintendent Taft reported seventy-three institutes of two days duration, and two hundred and nineteen one-day institutes.

"In a large number of counties, applications for additional meetings had to be refused and, as the applications for one-day institutes next year is considerably larger than that of one year ago, it is evident that it will be possible to hold only a small proportion of the institutes for which application has been made.

"As a rule, two men and one woman speaker were sent to each two-day institute but, in a number of cases, special talks upon 'Good Roads,' 'Farm Law,' 'Veterinary Science' and educational topics were arranged for. For the most part, two speakers appeared upon the program in the forenoon and three in the afternoon and evening of each day.

"During the afternoon session of the first day, the lady speaker took up, in the general session, some topics relative to the household or perhaps 'Poultry Raising' or 'Butter Making on the Farm,' and the second afternoon conducted a women's section.

The separate women's sections appear to be growing in interest and attendance."

K. L. Butterfield in 1901 said, "Michigan may well be proud of her record in relation to this important phase of rural education. Our state was not the first to hold meetings of farmers—such meetings were held early in the century just closed; we were not the first to agitate the holding of farmers' meetings with some degree of regularity and the calling of them farmers' institutes—the secretary of the Massachusetts board of agriculture as early as 1853 recommended this; we were not the first state actually to hold institutes—Illinois may claim that honor with a record going back to 1869; we were not the first state to establish a state-wide system of institutes, putting them into every county—Ohio justly claims to have begun that in 1880-1881. But Michigan was the first state to enact a law, which was done in 1861, providing for lectures to those not students of the college; the first, I believe, to make a state appropriation for farmers' institutes; the first to establish institutes as a permanent and regular phase of work for the college professors.

"It was about 1893 that the grange took the leadership in the increasing call for more institutes, inaugurating and forwarding to a successful issue a campaign which resulted in the present institute system of Michigan. In the State Grange of 1892 R. V. Clark, of Berrien county, offered a resolution, which was adopted, asking the Legislature for an appropriation of \$10,000 for the purpose of organizing and maintaining farmers' institutes in each county in the state. It carried.

"1. Whatever the future may show to be wise, I am convinced that our system of county institute societies has been of the greatest value in organizing and maintaining institute work. We borrowed this plan from Ohio, though our societies are better organized than theirs are.

"2. Women's sections. Mrs. Mayo began this work the very first year under the present law, holding twenty women's sections during the season of 1895-6. An average of about fifty-five have been held each winter since that time. Our plan of women's sections, with topics of special interest to women, as a regular feature of a county institute, was somewhat unique, has proved fairly popular, and is, I believe sound and useful.

"3. Conferences of state speakers and of institute society officers. The first gathering of workers occurred at the college in November, 1896, a conference in which the technical phases of institute work were fully discussed. At the round-up at St. Louis in 1897, the officers of county institute so-

cieties were also called in conference, and this practice has been followed ever since."

A leading and popular feature of the round-up when held at the Agricultural College is the arrangement for demonstration lectures by many of the departments, such as stock-judging, butter making, cooking, sewing, grafting, spraying, judging corn.

Mr. Butterfield continues: "I am inclined to believe that the greater value of institutes lies in inspiration rather than in information. At best the time is short. One theme can occupy but a few moments. It is a common observation that a strong institute stirs and wakens a whole community. And I conceive this to be one of the chief functions and best results of our institute work.

"The marked change of attitude toward the College, on the part of the masses of the farmers of Michigan, is a phenomenon so recent that I myself can testify to it. And I am ready to claim for our institutes a very large share in bringing about this change of feeling. The institutes have brought the college down to the people, where they could see its work; they have enabled college professor and practical farmer to face each other on a common platform.

"And best of all, our institutes have made possible a better grade of agricultural education all along the line. They have stimulated a wider and growing interest in the whole problem of rural education."

During the winter of 1904-05, the institutes in nearly all of the counties were unusually good.

From Supt. L. R. Taft's report of the winter 1905-06, I note the following:

"It is very evident that greater interest is being taken by the farmers in such meetings. Not only has there been a marked increase in the attendance, but the interest has been greater than in former years, and in perhaps a majority of the counties, the reports from the officers have stated, 'It was the best institute ever held in the county.'

"In many of the more southern counties, the attendance at the two-day as well as the one-day institutes has frequently been from two to three times as great as in 1905-6 under precisely the same conditions.

"During the week of November 20 and 25, the first normal farmers' institute in Michigan was held at the Agricultural College."

From his report of the winter of 1906-07, I glean the following:

"The number of the so-called county institutes has been two hundred fifty-nine, which is two greater than the previous year, and the number would have been fully three hundred had it been possible to grant the numerous requests for an increased number of regular one-day institutes.

"Several of those added to the lecture force are graduates of the Agricultural College who have demonstrated, upon their own farms, the correctness of the principles learned while in college and whose training has fitted them for taking up institute work.

"As in previous years, the work of carrying on institutes has been greatly assisted by the members of the faculties of the various normal schools and the State University, who have freely given their time.

"During the year, eighteen members of the College faculty have assisted at the institutes. The assistance rendered by the members of the College faculty and the staff of the Experiment Station has been considerably less than in previous years, owing to the increase in the number of students, particularly in the short courses, which are given at the time the institutes are held.

"The institute work in the state has been greatly indebted to the grange, both as an organization and to its officers and members, who have been of great help in carrying on institute work."

During many of these years, there has been an annual convention of farmers' institute workers of most of the states of our country, the sessions continuing for two days or more, each "worker" making a report of the work in his state. In this way every new and valuable point is "sown broadcast" to be adopted in any or all of the other states.

From Professor Taft's report of the winter of 1907-08, I quote as follows:

"The regular institutes have been conducted on much the same lines as in previous years. It can be truly said that the interest taken by the farmers in general in the institutes was never surpassed in Michigan."

In most cases the attendance depends on the weather, whether favorable or unfavorable for travel.

"Before selecting lecturers or topics for the farmers' institutes, the officers of each county institute society are requested to furnish a list of topics that they wish discussed, and speakers are secured who can handle the topics chosen and who will be likely to give satisfaction. In selecting speakers upon topics relating to practical farming or fruit growing, an endeavor is made to secure those who have been successful in actual practice.

"In a large number of counties the cooperation with the county superintendent of schools has been continued as, when proper arrangements are made, the results have been very satisfactory. During the forenoon and early part of the afternoon, the speaker thus furnished, who is generally from one of the normal schools or is the commissioner in an adjoining county, visits with the local commissioner the schools in the districts near where the institutes are being held, and reaches the hall about the middle of the afternoon for a talk upon educational matters and another talk in the evening.

"Representatives of most of the college classes also took part in the program and it proved an interesting feature of the meeting. For the horticultural section, brief talks were given by Mr. F. M. Barden, H. M. Conolly and D. B. Pratt. A symposium on the oat was furnished by eleven students in agronomy and a live stock demonstration was given by six seniors, while Dr. Beal trained twenty-nine young ladies who gave brief, well illustrated talks upon the form, structure and economic value of various plants from a botanical standpoint."

The report for this year contains over 300 pages and reports from year to year contain an increasing number of apt illustrations, increasing their value.

From L. R. Taft's report of 1908-09 I clip the following:

"The institute season just closed has, in every respect, been one of more than usual success. Not only has the number of meetings been considerably larger than in any previous year, but the attendance and interest were never surpassed. From several counties the report came to me that fully as many failed to get inside of the building as were actually accommodated.

"The largest total attendance, aside from the round-up institute, was at the Ionia county institute at Ionia, where the number present at the eight sessions was slightly over 4,800, or 600 for each session, but the Lenawee county institute showed an attendance of 3,843 at five sessions, or an average of 769 per session. Aside from the Adrian institute, the largest attendance per session was at St. Louis where the average for the six sessions was 703 with a total of 4,217, or nearly 400 more than were present at Adrian.

"The county papers throughout Michigan are evidently taking increased interest in institute work.

"The general increase in the interest taken by the farmers of the state in institute work led to there being far more calls for one-day institutes than it was possible to supply, but by carefully arranging the meetings so as to economize in the time and travel of the speakers, the number of institutes was considerably increased at a slight addition to the expense in previous years.

"In fully two-thirds of the counties a separate section for women was asked for upon at least one afternoon. At several points the women's section occupied an entire day or perhaps two afternoons. There were also a number of counties in which, although no distinct section was held, one of the evening sessions was in charge of the ladies and the program was carried out by them. Nearly every county in which separate women's sections have been held in the past has asked to have them continued.

"I desire here to state the distinctive features of the Michigan system in comparison with the systems in use in other states: 1. Institute societies covering an entire county, with officers and members in every township, and with a definite and permanent organization. 2. A union of state control and local responsibility, centralizing the system, but recognizing and utilizing, and even demanding local aid. 3. Local assistance in the program both in the set talks and in the discussions, here personal experiences are invited, as well as pertinent questions. 4. Women's work, treating, in separate sections for women, topics of special interest to them, and along mental and spiritual as well as material lines. 5. The 'long institute,' which is a short school in some specialty selected in accordance with the needs of the locality. 6. A 'round-up' meeting, consisting of a representative gathering of farmers at the end of the institute season, and the subsequent publishing of the report of institute work for the season made up largely of the report of this "round-up meeting." For a time, every other round-up was held at the College while the others were held elsewhere. From 1909, each round-up has been held at the College.

The superintendent of farmers' institutes, Levi R. Taft, in his last report (1910) says: "I am very glad to report increased interest in the farmers' institutes in all parts of Michigan. Not only have there been more calls than in previous years, but the meetings have been more evenly distributed, and, where the conditions have been in any way favorable for them, the attendance has been large and the general interest excellent. In a very large number of places, the largest halls available were not able to provide even standing room."

The reports of farmers' institutes was published in the reports of the secretary of the State Board of Agriculture, beginning with 1876 and closing with the year 1884. They were not published in the reports for 1885, but were printed in 1886. About this time the state law was changed so that reports of institutes, if placed in the reports of the secretary of the Board of Agriculture would be nearly two years old, when received by the farmers. Again it was changed so that the reports of institutes held in February, 1886, would be printed in the 1886 report ready for distribution the next December.

INSTITUTES FOR MECHANICS.

By invitation of the Detroit Y. M. C. A., the mechanical department of this college, some years ago, conducted a mechanical institute in Detroit; others have been held in other places. Professor Weil and Instructors Westcott and Leonard gave short talks on heat, steam engines, boilers, mechanical

clubs in connection with college extension work. Samples of work from the shops were exhibited.

INSTITUTES FOR RURAL PROGRESS.

About 1907, the college began holding an occasional institute with the above title, the first one held was at Hanover, Jackson county.

RAILROAD INSTITUTES.

As formerly mentioned, for some years past, there has been held a meeting of delegates from all the land grant colleges in this country where they discuss all sorts of topics that have a bearing on their work. The fact that the expenses of the delegates are paid by the colleges insures representatives from the remotest portions of our nation. There are no secret sessions; every item of valuable information is offered to every delegate, who is invited to pack it in his valise and try it on in his own state, if he thinks it worth while. With this rapid broadcast method of diffusion among so many, it is not easy for very many to be the first to bring out a new and valuable idea. With this explanation the reader has no reason to expect that Michigan Agricultural College shall originate all the devices which she brings out. Michigan was not the inventor of the railroad institute, but was early on the road.

"During the month of April, 1906, a series of railroad institutes was held with the cooperation of the Lake Shore and Michigan Southern and Michigan Central railroads, thirty being held upon the former and seventeen upon the latter.

"At each point a stop of from sixty to ninety minutes was made, and owing to the short time, it was thought best to discuss but a single subject, and, from its importance, the corn crop was selected.

"These talks were given in the coaches, after which those in attendance were taken to the baggage car, where there was an exhibit of some fifty varieties of corn adapted to use in Michigan, and various forms of seed testers and pans of growing corn illustrating the benefits of carefully curing and testing seed corn. Corn growing machinery and a rack for drying seed corn were also shown, grasses, grains, charts showing plans for barns, methods of grafting and budding, spray pumps and nozzles, samples of San Jose scale and other insects, samples of apples sprayed and unsprayed, red clover, jars of balanced rations, Babcock milk tester in operation.

"In 1909 during the eleven days sixty-five stops of sixty to ninety minutes each were made. The train consisted of three baggage cars and two or three passenger coaches in addition to the locomotive. One car was given up entirely to an exhibit of poultry, including representatives of a dozen breeds of chickens and ducks, bone grinders, feed boxes, dusting machines and samples of rations. Another car was used for demonstration of spraying and milk testing. It contained spray pumps, prepared spraying mixtures, samples of dangerous insects and diseases, and large photographs showing various horticultural operations. Much interest was taken in the demonstration of milk testing and at many points a large number of samples of milk were brought to the train for examination. The exhibit also included model sanitary stalls, prepared grain rations for animals, and photographs of typical animals of the various classes of live stock. The third car contained the farm crop exhibits. The walls were covered with samples of the different forage crops and with numerous varieties of the small grains. Upon a table

running the entire length of the car were shown typical ears of many kinds of corn. This exhibit showed very conclusively the importance of giving attention to the careful selection of seed and of testing it carefully before planting. At one end of the car was an exhibit of road-making materials and of photographs showing many of the roads built under the state reward road act, in charge of Frank W. Rogers, deputy highway commissioner."

In 1911, at the solicitation of the state miller's association, the College induced these railroads to furnish trains for a "soil and wheat special."

A train consisted of three coaches for the lectures, one of which was in charge of the ladies with an expert demonstration of bread and pastry made from flour ground from Michigan wheat; four other coaches contained exhibits.

The work is contagious. The state board of health were welcomed to hitch on two coaches to exhibit and speak of their work. Think of it, nine coaches railroading up-to-date information up and down the track!

The writer has known for a good while that Professor L. R. Taft was a very efficient superintendent of farmers' institutes. From his report in 1912, we glean:

"In no previous year have so many farmers' institutes been held in Michigan, or the interest in the work been so great. One feature has been the general distribution of the meetings. In round numbers there were, in addition to the round-up institute, two three-day institutes, and 82 county institutes of which 69 held sessions for two days. Nearly all of the others were in the Upper Peninsula. For the first time in many years an institute has been held in every county in the Lower Peninsula and there was but one county, Keweenaw, in the Upper Peninsula which did not have at least one institute.

"In the main, the attendance was excellent. In 1911-12 an innovation was attempted in running a 'better wheat' special during the month of August.

"The train as usual consisted of three passenger coaches in which lectures were given and four express cars which were used for the exhibits.

"The exhibits in one car illustrated the different classes of soils and proper and improper methods of handling them, and another was filled with specimens of some 40 varieties of wheat. The straw, grain and flour of the different varieties, as well as the bread made from them, were shown.

"One of the objects of the train was to demonstrate the merits of Michigan-grown winter wheat as compared with spring wheat for bread making, as well as pastry. The state millers' association cooperated by furnishing as a demonstrator, Miss Agnes Hunt of the domestic science department of the Agricultural College, and one car was given up to the ladies. Miss Hunt was provided with a kitchen outfit and both lectured upon and demonstrated the method of preparing the dough when making bread from winter wheat. The domestic science exhibits were in charge of Miss Vesta C. Haney, assistant to the superintendent of farmers' institutes, who demonstrated some of the kitchen utensils, such as fireless cookers, coffee percolators, bread and cake mixers, lunch boxes, etc., and displayed samples of the work done in the domestic science and domestic art departments of the College."

LECTURES ABOUT THE STATE.

The College has continued to furnish large numbers of lectures on a great variety of subjects, such as commencement addresses to high schools, addresses before members of the legislature, at meetings of the state grange

and associations of farmers' clubs, before growers of sugar beets, at picnics, before organizers of creameries and companies for manufacturing cement.

Roland Morrill, president of the State horticultural society was employed to give three lectures on peach culture in five different places, one lecture a day for three weeks. In like manner, three lectures to women at four different places were given by Mrs. Mary Mayo, besides two evening lectures to mixed audiences.

The man who took especial charge of each institute made a short written report. In a number of cases, students from the public school attended with the view of making reports each to his school. Secretaries of institute also made reports and were asked to answer for future guidance ten questions.

EXHIBITS AT FAIRS.

The College sent to the centennial exhibition at Philadelphia, a large map of the College grounds, a manuscript history of the institution, one hundred and twenty kinds of grasses, two hundred and fifteen specimens of woods. For the collection of potatoes and for the collection of forest woods, the College received diplomas. The grasses, potatoes and timber were collected and prepared by Dr. Beal. He prepared and sent to the fair at New Orleans large exhibits of grasses, grains in the straw.

The College made a collection of fruits at the meeting of the American Pomological Society held in Chicago, and at another meeting held in Boston, Massachusetts.

THE COLUMBIAN EXPOSITION OF 1893, CHICAGO, ILL.

Dr. R. C. Kedzie for the chemical department prepared:

Thirty-eight characteristic Michigan soils, mounted in show bottles, with a label bearing chemical analysis.

Forty-six samples of Clawson wheat cut at intervals of 24 hours, from time of blossoming to dead ripeness, mounted in show bottles with results of chemical analysis.

Forty-seven kinds of commercial fertilizers offered for sale in Michigan in 1893, mounted in show bottles with results of chemical analysis.

Thirteen specimens of Indian corn raised in Michigan, and five specimens of feeding stuffs, all mounted in show bottles with results of chemical analysis.

The following varieties of corn were exhibited as the leading varieties of Michigan: Davenport, Holt, yellow dust, improved yellow, dent and Hathaway yellow dent.

Professor F. B. Mumford for the agricultural department exhibited over four hundred samples of wheats, and one hundred seventy-five samples of oats.

An exhibit was prepared by Dr. W. J. Beal, containing thirty specimens representing forage plants, two hundred samples in which were represented the noxious weeds of Michigan, twenty-seven large bundles of grasses, thirty-five native fruits and nuts, a quantity of large fungi, two hundred seven glass-covered boxes of seeds of grasses and other forage plants, seven lawn-grass mixtures, four roots of plants of Indian corn (which attracted the most attention of anything in the agricultural exhibit of the state,) thirty-one species of grasses full length pressed and sewed on paper, one hundred thirty-six true grasses of Michigan, five sets of drawings of fungi, and fifty-four bottles of crude drugs of Michigan.

Dr. Beal also exhibited six hundred seventeen herbarium specimens illustrating special features as follows:

Color of autumn leaves, remarkable flowers, beautiful fruits, showy bark, climbing plants, plants very light in color, small evergreens, bronze evergreens, flowers for winter bouquets, native plants of bog and marsh, aquatics good for cultivation, ferns good for cultivation, plants indicating a fertile soil, plants indicating a sterile soil, plants for protecting drifting sands, plants for carp-ponds, native tree—shrubs, leafless parasitic plants, green-leaved parasites, plants poisonous to the touch, three hundred thirteen kinds of wheat, nine volumes of students' notes, drawings, essays, etc.; and about two hundred photographs of botanists, American and foreign.

Professor L. R. Taft for the horticultural department made exhibits educational in character, consisting largely of samples of the work of the students, with a small collection of garden and greenhouse hand tools. The students' work showed twenty drawings of the more troublesome fungous diseases studied by them, ten illustrating different methods of building growing and forcing houses, and ten others showing the different methods of propagating plants.

There was also exhibited a collection of the more valuable insecticides and fungicides, carefully labeled so as to show the ingredients of each, while in smaller bottles grouped around the others, were the materials in the actual quantities required. A collection of plaster models of potatoes, molded and colored by students was also shown, as well as about one hundred and fifty varieties of garden vegetable seeds, most of which were grown and put up by the students. Bound volumes of the examination papers of the three upper classes were also shown.

To the cooperative exhibit of agricultural and experiment stations, was also contributed a set of drawings illustrating greenhouse construction, and a set of photographs showing the equipment of the department and the students engaged in various kinds of laboratory and manual labor.

The exhibit which attracted most attention, however, was the collection of wax fruits and vegetables, shown in the horticultural hall. It consisted of about eight hundred pieces, and the specimens had so natural an appearance, that, although plainly so labeled, many who saw them were with difficulty convinced that they were artificial. They were made by Mrs. Stanley Potter of South Haven, the fruits being modeled from specimens grown upon the sub-station grounds or that were kindly contributed by friends along the "lake shore," while most of the vegetables were sent from the College.

The Department of entomology exhibited nearly 2,000 species of insects collected by seven students, and samples of kerosene emulsion. Professor E. A. A. Grange for the veterinary department exhibited a horse dissected and mounted, the skeleton of a cow, a sheep, and a hog, the model of a horse, and models of horse's teeth.

Professor L. P. Breckenridge for the engineering department exhibited a nice lot of work of students, models' etc.

Professor W. S. Holdsworth exhibited a lot of drawings, etc., the work of his students.

EXHIBITS AT STATE FAIRS.

For forty-seven years a number of departments of the College have made exhibits at state and district fairs. These were usually well placed, well labeled with the view of making them educational, employing students in all

phases of the work. The exhibits have covered a wide range of topics, including cattle, sheep, poultry, butter making, birds, insects, grains, grasses, weeds, fruits, flowers, foliage plants, chemical analyses, samples of students' work in wood and iron from the shops, drawings, photographs, and logs of locust and chestnut grown in the arboretum as a lesson in growing posts and poles.

After the state fair was located on its own grounds in Detroit, the College planted a grove of forest trees, plats of grasses, grains, weeds and curiosities. A number of the faculty have been sought to act as judges at these fairs, where they never lost an opportunity to employ students to assist in such work.

DEMONSTRATIONS AT FAIRS.

Besides bearing generous labels, the exhibits were usually attended by students who answered questions and made explanations. Demonstrations have often been made with lectures in judging domestic animals, the process of making butter and testing milk. Addresses have been made to small crowds in buildings or tents, but usually it was hard to compete with fakirs and auctioneers.

EXTENSION WORK IN HORTICULTURE.

Professor H. J. Eustace reports in 1910 that the extension work in horticulture is meeting with splendid success. A special effort has been made to assist farmers who have manifested a desire to apply modern methods to old apple orchards, and to advise in regard to new plantings in such matters as site, varieties, planting, pruning, and cultivation. Considerable effort has been made to demonstrate the advantages of spraying potatoes. In all of this extension work an effort has been made to interest the people of the neighborhood, and this is best done by demonstrations in the orchards and fields.

When requested an expert has been promptly sent to any place in the state to look into the matter of supposed poisoning by plants, the sudden appearance of some new weed or insect pest. So far as possible, where desired, an expert has been furnished to aid farmers on the management of a wood lot or plotting a new one.

TEACHING HORTICULTURE IN THE ORCHARD.

Itinerant demonstration work is a regular outgrowth of the old style institute. For example, for three years (1913) O. K. White, traveled about the state carrying a lot of modern tools and demonstrating the proper pruning of fruit trees, talking and answering questions while he cut off the limbs; the same in spraying with mixtures to destroy insects and fungi; short lectures explain where to get the ingredients, the proportions, the texture and the proper seasons for each operation. In season, there are talks and practice in thinning fruits; in modes of picking, assorting, and packing for market; a case shows specimens of the worst insects, each labelled. Incidentally questions are answered concerning the cultivation of fruit trees and bushes, fertilizers, diseases and treatment of potatoes. This work still continues.

EXTENSION CLASSES IN POLITICAL ECONOMY.

By Professor N. D. Corbin.

"Two classes were organized in 1892: The Lansing class was organized within Capital Grange through the activity of Mr. A. D. Bank. The grange

voted to make the lectures and discussions a part of their regular exercises, but a special enrollment was made of those members who would undertake to do the collateral reading which included twenty-four names. Mr. Bank guaranteed my necessary expenses.

"At Charlotte the organization was different. Mr. C. E. Chappell acted as promoter. The prevalence of lagrippe nearly prevented the class from being formed, but on a second call thirty-one names were secured. This was not a grange affair, although the prime movers were members of that society. A chairman and a treasurer were appointed. A membership fee of fifty cents was agreed on and demanded in advance. This fee covered the expenses of lecturer and class, Mr. Chappell entertaining the lecturer at his home, however.

"The work was managed similarly in both classes. A text book costing \$1.25 was required. At first definite parts were assigned as preparatory to the approaching lecture and the discussions which followed the lectures were upon topics presented in the book and discourse. Later special topics were assigned to individuals with references, and each one requested to lead discussion upon his assigned subject. Outlines of each lecture were sent to each member of the class. At Lansing the whole membership of Capitol Grange was welcomed to the lectures and only the class members expected to read up especially. At Charlotte, the class meetings were not advertised at all outside the class, nor was the course advertised except by individual exertion. In Lansing the attendance on the lectures varied from forty to seventy and maintained a fair average throughout.

"At both places the class membership dwindled considerably. Those who simply came to the lectures kept coming but many of those who undertook to study the book, and to prepare on topics, found it more convenient to stay away than to make the preparation. A corporal's guard remained faithful to the labor to the end, but these did not care for an examination. In each place there were a few who worked well and with creditable results clear through. Ten lectures were given at Lansing and six at Charlotte.

"At Lansing further, the younger members were anxious for interruptions to admit of social evenings, and regular grange business sometimes curtailed the time for extension labors."

There seems to be a most encouraging eagerness for self-improvement amongst the farmers of the state.

The lecture must be the principal thing in the course, and should depart from the class room standard so far as to amuse as well as instruct.

Only those courses of study can be profitably undertaken which do not require laboratory or library facilities to make them effective.

The class should be so organized as to have a pecuniary interest in the course. A membership fee of a dollar, or a half more, for six lectures is not too much. Local expenses should devolve on the class. Advertising is important.

SHORT SCHOOLS OF AGRICULTURE.

The department of agricultural education started the plan of holding for five days in certain places an agricultural school. Some lectures were given, but the school differed from an institute in the fact that lessons were given out and studied, and the classes were set to judging corn, studying legumes and pastures, testing seed corn, making examination of silos, judging horses, cattle, poultry. Four of these schools were held early in 1912 and it was expected that the number would be increased to twenty-five the year following.

COOPERATIVE BREEDING ASSOCIATION.

Beginning in 1907, W. F. Raven has been carrying out the plans of Dean R. S. Shaw, and in 1912 had already induced dairymen in 35 neighborhoods to unite in each case in the use of a thoroughbred sire for a period of at least six years. The associations are visited, advised, and encouraged from time to time to adhere to the original plans. Similar work is beginning with sheep, swine, and poultry. Incidentally questions are answered concerning the care, feeding and other points of importance. Associations have been formed for testing dairy cows. In 1913, this work was increased.

WORK WITH CEREALS AND CLOVERS.

A. R. Potts is studying, throughout the state, the races of corn and other grains best adapted to certain regions, counseling the growth of alfalfa in suitable places.

CORN GROWING BY BOYS.

In 1908, Professor Jeffery said: "In two of the counties of the state, Muskegon and Mason, boys' corn growing associations have been formed. This movement is receiving the help of this division in the way of advice, personal instruction, bulletins, etc. Corn growing contests are now in progress and later corn shows and prizes are planned for." In 1909 he assisted in the organization of four county boys' corn growing association, covering about 350 boys of each association. In 1910 he reported a large and increasing demand in this line among boys far beyond his ability to supply. In 1911 and 1912 this good work was extended and continues.

A *Michigan Experiment Association* was organized January 17, 1911, with officers scattered about the state. The secretary-treasurer elected was V. M. Shoesmith, Professor of farm crops at the College. They prepared a constitution and by-laws and judging from the officers chosen some profitable results are to be expected. The above heading gives an idea of the work to be undertaken.

INSPECTION OF NURSERIES AND ORCHARDS.

To guard against the spread of some of the worst insects such as the San José scale, brown-tail moth, tussock moth, and the spread of peach yellows, crown gall, and other "plant diseases," a state inspector of nurseries and orchards has for some years been appointed to see that the state law is observed by nurserymen and dealers in nursery stock. L. R. Taft assisted by several persons has been entrusted with this important work.

STUDENT INSPECTORS OF DAIRY CATTLE.

Advanced students or other agents have been employed to visit those requesting it to inspect and test cows of the various dairy breeds for advanced registry, veterinary and sanitary.

VETERINARY AND SANITARY.

Dr. Marshall of the bacteriological department manufactured and distributed serum for hog cholera, cultures for producing nodules on alfalfa and continued the work on tuberculosis begun by Dr. Grange. Since 1912, Dr. Giltner has continued these important investigations.

In 1911, Dr. Ward Giltner was selected to do some extension work in connection with the state live-stock sanitary commission by helping to discover any outbreaks of diseases and to decide the nature and remedies.

COLLECTIONS OF INSECTS FOR HIGH SCHOOLS.

In 1902, from the report of Professor W. B. Barrows I quote as follows:

"For several years it has seemed to us that the College might do more than it has done to stimulate interest in nature study in the common schools of the state, and in view of the remarkable increase of interest in such lines recently it was determined to attempt something practical in the line of insect study.

"Fifty cases of insects were prepared and sent to as many high schools of the state; others are to follow, each accompanied by a pamphlet description of the insects in the collection. Each collection contains about seventy-five specimens of the more common and interesting insects of the state, clearly labeled with common and scientific names. The collection illustrated all the important orders of insects.

"These collections have been enthusiastically received by the schools thus far provided and it is evident that they will be useful to the schools in many ways, while at the same time they will serve to bring the College in closer touch with the schools." Collections of fungi, grasses and seeds of weeds for high schools and granges have been made.

UP-TO-DATE ITEMS FOR THE FARMER.

From a dingy copy of a postal card such as were sent out by the writer April 12, 1875, the following is taken:

"We have been repeatedly asked by farmers in many different parts of our state if there were not some way by which more of them could learn what was done at the college in the way of experimenting, teaching, or any other items of general interest to intelligent farmers. Six thousand copies of each annual report of the state board of agriculture are printed and distributed, but they can supply only a very small portion of those who ought to be interested in such things. Besides, the reports are not always well read by those who get them. They come but once a year. They are sometimes laid upon the shelf and forgotten. These reports are sent to many newspapers of the state, but, like other books, they are never quoted to any extent. As every farmer does not take any one state paper, members of the faculty propose the following plan, to reach all alike of our two hundred fifty Michigan papers."

It was proposed to send occasionally, at the same time, to every editor who desired it, a printed slip containing any new or important information, thought to be of value to farmers; to be given out in season when people are most likely to be interested in them. Some sixty-four papers responded, one of which furnished "patent insides" for eighty different papers. Although not systematically followed up by men with time and money at their disposal, the plan worked well for a time.

In more recent years press bulletins from the experiment station serve much the same purpose.

THE EXPERIMENT STATION.

The College receives from the United States annually \$30,000; from the state \$5,000; in 1911 \$8,298.62 license fees, from brands of commercial fertilizers. This amount is used in preparing about twelve popular bulletins a year besides those of other grades. The mailing list is about 65,000.

At present the bulletins of the Experiment Station are classified as follows:

First, popular bulletins; second, special bulletins of local interest; third, technical bulletins, scientific; fourth, short circular, practical topics; fifth, short press bulletins, for the use of newspapers.

No appropriation of state funds has ever been made for the Experiment Station till September of the present year when \$5,000.00 was set over from college funds for that purpose. The bulletins, however, have been printed from state funds and the amount has varied from year to year. In 1910-11 the amount was \$4,183.76; in 1911-12 it was \$6,998.42.

The receipts from fertilizer license fees in 1910-11 amounted to \$4,520.00 and in 1911-12 to \$5,420.00. These funds go to the experiment station, first to defray the cost of making analyses of commercial fertilizers and then for the general use of the station in research work.

ANSWERING QUESTIONS.

Questions in great variety have kept pouring in, rapidly increasing in numbers in recent years, perhaps five thousand or more in one year, sometimes ten questions to a letter.

In the main these are received by the professors of botany, chemistry, entomology, zoology, horticulture, farm crops, dairying, bacteriology, soil physics, forestry, veterinary. The writer occasionally noticed some of these in his reports and though he repeatedly mentioned the idea to other members of the faculty, no systematic effort has been made to report a summary of the numbers or the nature of the reports. He feels certain that enough has not been said concerning the extent and importance of this kind of teaching. In some cases, comprehensive answers to questions most frequently sent in have been printed and kept in duplicate to enclose in a letter of reply.

Answering questions is a line of work of high rank, each person securing direct answers in season to his own questions that are uppermost in his wants.

IDENTIFYING SPECIMENS.

Most likely the farmer is annoyed by some insect, fungus, or weed which he sends in for name and directions for the easiest way to get rid of it. Innumerable other subjects come up for inquiry and he writes to some one at M. A. C. for help.

TESTING SEEDS.

The farmer sends samples of clover seeds, grass seeds, beet seeds to be looked over by an expert; he asks for identification and vitality; he asks one of a thousand questions and gets a prompt and courteous reply.

FARM HOME READING CIRCLE.

I quote the report of Professor F. B. Mumford for 1894:

"The interest manifested in the work of the farm home reading circle during the year just closed has been very gratifying. The circle has made a steady growth and a large number of farmers and others not directly interested in agriculture have availed themselves of this opportunity to increase their knowledge of agricultural subjects.

"During the year 5,000 short circulars and 2,000 large circulars, containing detailed information of the plan and scope of the course, have been

printed. There have been distributed nearly 500 books through this plan, on subjects pertaining to general agriculture or to special lines of farming.

"The actual number of members registered is 125; but this in no sense represents the number, 300-400, who are actual students of the course. Many granges, farmers' clubs, etc., have purchased books to be read as a part of their program. Library associations have, in some cases, secured books through the College, and the number who come directly under the influence of the course through these various agencies can be estimated with difficulty. It is of great importance that the plan and scope of the work be kept constantly before the people and its practical workings explained in detail. Wherever the course has been thoroughly tried, and its opportunities appreciated, it has met with success.

"The value of this course to farmers actually engaged in the business of farming cannot be overestimated. Its commendable object is to bring the farmers and college into more intimate and friendly relations, which can but result in advantage to both."

In 1896, Professor Mumford adds:

"The farm home reading circle has gradually grown, not only in the number of readers and members, but also in favor among farmers and gardeners since its organization in December, 1892.

"There are at present 221 members enrolled. Of this number 38 have joined this year. It should be remembered, however, that often several members of the same family read the same books and yet have never asked to be enrolled members of the farm home reading circle.

"The above number of members includes only those who have ordered books. We have a list of thirty who have sent in applications for membership who, not understanding the plan of the F. H. R. C., or for other reasons unknown to us, have never ordered books.

"During the year we have sent out and distributed at institutes 5,000 advertising folders and 1,500 circulars containing full information regarding the farm home reading circle. Two hundred and fifty requests for full information have been received.

"Books to the value of \$175 have been ordered by members during the year. A few changes have been made in the books offered in the several courses.

"Previous to June 30, 1895, anyone, whether a resident of Michigan or not, was allowed to join the F. H. R. C. free. Now, we charge non-residents a membership fee of \$1.

"Forty examinations were taken by members, and forty certificates issued showing the completion of certain books by members making satisfactory reports."

FARM HOME READING COURSES.

In June, 1909, after Professor French had slightly changed the name he began to give considerable attention to the subject. Letters came in showing a renewed interest in reading courses by farmers and their wives who are keeping up with the times.

In all, 193 persons have read the first year's course, and fifteen granges, six farmer's clubs, and two lodges of gleaners have read the course as a club. Certificates are given on the completion of each year's course and a diploma on the completion of the four years' course.

Following is an outline of the courses by years:

Courses for Men—

First year.—Types and breeds of farm animals; first principles of soil fertility.

Second year.—Fruit culture; farm accounts.

Third year.—Feeds and feeding; milk and dairying.

Fourth year.—Farm poultry; farm management.

Courses for Women—

First year.—Home economics; physical nature of the child.

Second year.—The art of cooking; bacteria in the home.

Third year.—Sewing and dressmaking; nursing.

Fourth year.—Domestic science; sanitation and decoration of school and home.

The College has never had the means, at least has never used a tenth part of the money necessary, to give the reading courses a full and vigorous existence.

FLOWER SEEDS FOR COMMON SCHOOLS.

In April, '96, the Horticultural department sent out 500 collections of flower seeds for the decoration of the yards of Michigan rural schools. To each school were sent directions for preparing the ground, planting the seeds, and caring for the plants, and also a few words of instructions for arbor-day planting.

Each school receiving seeds was requested to make a report in the fall, only a few of which ever arrived.

The first report contained the following:

"The fore part of the summer was very dry, so that the flowers did not come up till about June 10th. Our school closed June 28th, just as the candy tufts and a few balsams were in blossom. They were nicely cared for during vacation by Miss May and Ethel Smith, two pupils who lived near the school-house. Our flowers were the nicest during that time. There were quite a number in blossom when school began on September 14th, and we had quite a number of bouquets until the frost killed them about September 20th."

Owing to the difficulties indicated in this report, the project was discontinued.

AGRICULTURAL SURVEY.

From first to last there has been much discussion as to the value of land in some of the newer portions of the northern counties of the southern peninsula. To be ready to give an expert opinion in 1909, a good beginning was made toward a survey, by selecting and analyzing samples of the soil, by notes concerning the trees, shrubs and other vegetation, the location of streams, lakes and swamps, the nature of crops grown in various neighborhoods, and memoranda of abandoned farms. Work begun in the counties of Roscommon, Otsego, Cheboygan, Presque Isle, Missaukee, Clare and Mason.

INSPECTING COMMERCIAL FERTILIZERS.

For many years now all dealers have been required to procure a license from the State Board of Agriculture to enable them to sell fertilizers. To insure the grade, samples selected by an agent are analyzed and the results published in bulletins.

DEPARTMENT OF AGRICULTURAL EDUCATION.

To supply an urgent growing demand for the teaching of agriculture in the public schools, the College established in 1908 a department of agricultural education and selected Professor Walter H. French to undertake the task.

I quote from his first report for June 30th, 1909:

1. "During the winter and spring terms I have taught the classes in education, that is, science of education and history of education.

2. "I visited twenty high schools with a view to introducing courses in agriculture.

3. "I gave addresses in ten farmer's institutes.

4. "I have visited and addressed twenty-five granges and farmer's clubs in the interest of agricultural education.

5. "I have lectured in four teachers' institutes.

6. "I have prepared a course of study in agriculture for high schools and a report showing the work done in the one experimental high school during the year. These have been published in pamphlet form.

"Special effort is made to interest the neighboring farmers, by occasional lectures by men from the college; by way of a one-week's course for farmers; by demonstrations on some of the farms of live stock, grains, fruits, etc., etc.

"THE HIGH SCHOOL COURSE IN AGRICULTURE.—The following has been prepared with the object in view of changing the existing course of study in high schools as little as possible:

9th Grade.

English,
Algebra,

Arithmetic and Bookkeeping,
Botany $\frac{1}{2}$.

10th Grade.

English,
Geometry,
General History,

Horticulture $\frac{1}{2}$,
Crops $\frac{1}{2}$.

11th Grade.

Literature and Composition,
Physics,
Commercial,
Geography,

Zoölogy,
Live stock and Poultry $\frac{1}{2}$,
Dairying and Farm Mechanics $\frac{1}{2}$.

12th Grade.

Literature and Rhetoric,
Chemistry,
American History and civics,

Soils $\frac{1}{2}$,
Farm Management $\frac{1}{2}$.

"I arranged a course of reading for farmers and farmers' wives. This work is termed the college extension reading course.

"I find that a course in agriculture is given in the Normal School's at Mt. Pleasant and Kalamazoo, also a short course is given in each of the forty-one county normal training classes."

M. A. C. FIGURES IN THE STATE HORTICULTURAL SOCIETY.

"The 39th annual meeting of the Michigan State Horticultural Society was held at Kalamazoo on the 7th, 8th, and 9th of December, 1909, in conjunction with the Kalamazoo Fruit Growers' Society. It was one of the most successful meetings that the society has held in recent years, and the good, profitable fruit crops of the past year was manifest in the large attendance and the good feeling that was everywhere evident. The fruit exhibits were very large.

"The annual banquet for the society, which was held in the Elks' Hall on Tuesday evening, was a very pleasant feature of the meeting. Mr. Thomas Gunson presided as toastmaster in his inimitable way.

"Quite a number of junior and senior students attended and entered the students' fruit judging contest. The State Horticultural Society offers to the horticultural students of the College three prizes—\$15, \$10, \$5 respectively.

"At the close of the meeting on Wednesday afternoon there was an impromptu gathering of M. A. C. men, and a large number were called upon for short talks. One of the pleasant features of the gathering was two members of the class of '88, who were presented and gave their class yell. Before the meeting broke up it was decided to organize the M. A. C. students, who are not interested in fruit growing in Michigan into an experimenters' league, the object of which will be to carry on horticultural experiments on their fruit farms and announce their results at the meetings of the State Horticultural Society.

"The following is a nearly correct list of M. A. C. alumni and students present at the meeting: (In some cases the students are with the class indicated and not graduated.)

M. D. Buskirk, '85.	C. A. Reed, '05.
C. E. Bassett, '86.	C. A. Pratt, '06.
C. S. Bristol, '82.	O. K. White, '07.
C. B. Cook, '88.	O. I. Gregg, '07.
L. A. Bregger, '88.	R. L. Pennall, '07.
Paul Thayer, '00.	G. W. Lindsley, '07.
J. H. Skinner, '01.	H. A. Taft, '09.
H. J. Eustace, '04.	R. G. Voorhorst, '10.
C. A. Seeley, '01.	J. A. Miller, '10.
W. S. Palmer, '02.	C. E. Smith, '10.
R. G. Thomas, '03.	G. C. Wagner, '10.
B. A. Wermuth, '03.	C. B. Tubergen, '11.
S. B. Hartman, '03.	L. E. Babcock, '11.
	U. S. Crane, '11.

EXCURSIONS TO THE COLLEGE.

Elsewhere this subject is mentioned. In August for each year except 1912 and 1913 since about 1897, the plan suggested and begun by K. L. Butterfield of inducing the railroads centering at Lansing to run excursions to the college grounds for a week has been continued. This affords an inexpensive outing, a visit to the College, opportunity to meet the professors and inspect, at all times, particularly in the growing season, the College with all its fields,

experiment plots, orchards, gardens, botanic garden, arboretum, forest nursery, greenhouses, museums, nurseries, trees and shrubbery, barns, horses, cattle, sheep, swine, poultry, bees, machinery, different sorts of fence, barns, sheds, laboratories for cooking, making garments, laboratories and shops of the Engineering division, and many other things not enumerated,—all these and more improving from year to year form very instructive exhibitions well worth the attention of any inquiring mind who has an eye to self improvement, that attract crowds of visitors, many of whom bring specimens and ask questions.

NEW LINES OF STUDY.

During the year closing June, 1912, the extension work met with marked success. A new line of endeavor was opened up in the form of encouraging farmers to give systematic care of the woodlot or to begin a new one. In the upper peninsula, fourteen alfalfa clubs were organized, ten potato clubs, thirteen corn clubs, six breeders associations. Attention is called to the fact that improvement in one particular line leads to improvements in other lines. Closely related to extension work is the increase in the number of classes, which with the professor in charge visits a farm, orchard, or garden which most likely is conspicuous for excellence in some method pursued. Engineers have made excursions to visit shops; classes in home economics have inspected bakeries, hotel kitchens, the condensed milk factory, laboratory of the state board of health, and other places of interest; foresters visit and work in the woods, and saw mills; students of agricultural education visit classes of various grades, and veterinary students visit high grade dairy farms and meat-packing houses to investigate the methods of food inspection.

The topics that have been discussed at these institutes during the last thirty-five years are bewildering.

The range has been wide, the progress wonderful, and best of all, a very large number of farmers and teachers in agriculture have been awakened to better things.

Some portions of Chapter 14 would apply to this chapter also, such as the influence of the grange.

FARM MANAGEMENT, FIELD STUDIES AND DEMONSTRATIONS.

Nothing else has been equal to extension work in awakening the people to look with favor on the good work going on at the Agricultural College. Fortunately, the United States Department of Agriculture in cooperation with the college has this year, 1913, made a beginning to broaden and intensify this work. The state leader and two district supervisors make the college their headquarters. In so far as available the men employed in the work have been trained at the Agricultural College. Congress appropriated \$300,000 to be used the first year and \$375,000 for the next year, beginning July 1, 1913. This amount is divided among the states of our Union, Michigan receiving the first year about \$19,500. The counties in which this movement has been started have provided a sum of money about equal to that received from the United States Department of Agriculture. It is probable that this amount will be much increased and supplemented by the state. The work began in eleven counties and will be gradually extended to cover the entire state. At present fifteen men are employed, including a state

leader, three district supervisors and eleven county agriculturists. In addition to this there are ten other counties already organized to follow suit. The work will not be confined to demonstrations but will also include farm surveys to determine the most profitable types of farming in a particular locality, and studies in the cost of production of crops, animals and animal products. Attempts will be made to bring the producers nearer to the consumers. Farming as a complicated business will receive attention and much valuable information will be gathered from the best farmers and passed on to all others. The practice will be to approach farmers in the attitude of learners or investigators rather than as teachers.

The state leader is Eben Mumford, Ph. D. The men engaged in the work are enthusiastic and filled with hope for the good they may accomplish.

At present, July, 1913, Dr. Mumford's force consists of sixteen men, while the College furnishes four.

CHAPTER XI.

METHODS OF TEACHING.

For the annual reports due June 30, 1892, President Clute made a good suggestion to the members of the faculty, viz., that each include an account of his methods of teaching. Portions of the reports are here given:

"In our College the student in English language is set to work with the language, its history, its structure, the relation of its parts, its use, its analysis and synthesis. In English literature he studies masterpieces of style and thought, he learns what are the elements that make them great, that enable them to appeal to noble minds in every age and in every walk of life.

"If the laboratory method is thus used in mathematics and English, much more is this the case in all the natural sciences. Here every step is a study of things. In botany the plants, in entomology the insect, in zoölogy the animal, in geology the fossil or the rock, in chemistry the simple or the compound, is always before the eye, and can be manipulated as desired. The microscope, the scalpel, the hammer, the test-tube, or the reagent, is always at hand to aid in learning what the thing has to reveal.

"By our system of teaching and of labor, the farm, the stables, feeding pens, silo, cellars, gardens, orchards and forcing-houses, all become parts of a great agricultural laboratory in which the student learns to do by doing.

"Labor on farm, in gardens, woodshop, is thus an essential part of our educational system. It was introduced when the College first opened under President Joseph R. Williams in 1857, was adhered to in all the pioneer vicissitudes of a new departure in education, has grown into the very fibre of our work. We are glad to believe that we have contributed something of value to the successful solution of manual training in the higher education."

METHOD OF TEACHING CHEMISTRY.

R. C. Kedzie, in his report for 1892, speaks as follows:

"The scope of the instruction has special relation to agriculture in its broad sense—the bearing of chemistry on vegetable and animal life. While the principles of science are clearly set forth, the influence of chemistry in every process of farm and garden, in barn and stockyard, is brought before the student's mind. He is reminded that chemistry is not confined to laboratory and smelting works, but lays its plastic fingers on every process of growth and change. There is not a leaf rotting by the wayside but is touched by the wand of chemistry.

"To enable the student to know in its fullest sense the science which he is pursuing, he spends some hours each week in laboratory practice, performing the experiments which develop the basic facts of the science; to construct his own apparatus, to repeat and vary these experiments for himself and bring him in touch with nature in a way not possible for the onlooker. The aim is to unfold the ideas of the old Greeks, in whose idiom 'to have seen' means 'to know;' for to do is the best way to see.

"This laboratory practice gives the student skill and readiness in manipu-

lation which are of value to him in all his subsequent course. It also cultivates a taste for original research. The opportunity for this laboratory practice is eagerly embraced by all the students.

"The student is required to keep in a note book a careful account of the tests by which he detected the composition of all materials determined, which renders him familiar with chemical nomenclature and also trains him to distinguish between characteristic and non-characteristic tests. It is applied logic.

"As taught in this College agricultural chemistry may be defined as the chemistry of plant life."

METHOD OF TEACHING ZOÖLOGY.

Professor A. J. Cook reports in 1892:

"The aim and desire in this department is to make the fullest use of the laboratory methods. We believe that the discipline and information received by handling and closely examining a specimen is far more valuable than mere study of books. Owing to the wide range of studies in the department, the small amount of teaching force, and the limited amount of time, of necessity, available for laboratory work, we are unable to do full justice to all of the subjects.

"Prior to the work of zoölogy the student is given an excellent course in free hand drawing.

"Again, the students in zoölogy have had thirty weeks of most admirable instruction in botany. This has given them the habit of observation, skill in the use of the microscope, and such habits of laboratory methods that they are better able to make progress in the briefer zoölogical courses than they would otherwise be.

"The laboratory work is devoted to careful dissection of a cat. The viscera are dissected out, described and illustrated by drawings. The respiratory, circulatory, and nervous systems are examined in the same way and the muscles of a single part are thoroughly studied. The work is all described carefully in writing and, as far as practicable, illustrated by carefully prepared drawings. After this, those who elect to do so are permitted to go carefully over an herbivore, usually a lamb, that comparisons may be made with the carnivore already examined.

"Agriculture is a very important factor in successful pomology, horticulture, indeed in all agriculture.

"We know from actual demonstration that insects, principally bees, are absolutely essential to a full production of fruit, vegetables and seeds, in very many of our most valued farm and orchard products. Reciprocity seems to be a law of nature, which is no better illustrated anywhere than between bees and plants. The plants feed the bees, and even signal them by their bright-hued bloom, while the bees return the favor by fertilizing (pollinizing) and cross-fertilizing the flowers, thus increasing the fruitage. Farmers now know and recognize the value of bees in the Alsike and white clover fields; they will soon appreciate their good offices in the orchard and garden no less heartily.

"In thirty-five years the entire bee-keeping apparatus—commencing with hives—has been revolutionized; the breeding of bees, despite the inherent difficulties, is rapidly approaching perfection; comb foundation, an artificial product from pure beeswax, is used with marked success and great profit. The extractor gives a liquid product so excellent that it is preferred by many

to the incomparable comb honey, and so has banished the old strained product from every respectable apiary. The elegant one pound section has driven the box and large frame into oblivion. While the solar wax extractor, the bee tent, the queen excluder, and the bee escape, though so recently invented, are in common use, and prove what intelligence may do for any pursuit. The winter problem is apparently solved, 'foul brood' is rapidly losing its terrors, and 'sugar honey' is able to bridge the disaster of poor seasons, as now seems likely, the last foe will be vanquished.

"It took more than a dozen years, to convince the farmers of the wondrous values of arsenites in conquering the worst apple enemy, the codling moth."

METHOD OF TEACHING BOTANY.

Dr. W. J. Beal, in his report for 1892:

"Nearly every report to the President, for the past twenty-one years, has contained something on this subject. The New Botany, a lecture published in the third edition by The Rural Publishing Company, treats of my methods.

"The chief aim of the first course of twelve weeks' daily work is:

- "1. To induce the students to become accurate and self-reliant observers.
- "2. To acquire a knowledge of the gross anatomy of plants.
- "3. To become familiar with the leading technical terms used in describing flowering plants.
- "4. To gain an insight of plant morphology.
- "5. To make some careful drawings.
- "6. To practice describing plants.
- "7. To learn by observation a few of the ways in which the flowers of plants are fertilized, each pupil presenting one essay during the term.

"In this course pupils are at once, and for some weeks, mainly engaged in the careful examination of plants without the study of books. These studies are to some extent made before coming to the class, though largely made in the laboratory under the supervision of the teacher. Nearly all the parts are examined before any names are given for them.

"The chief aim of the second course, of six weeks of daily study, is:

- "1. To induce the pupils to learn how to familiarize themselves with some species of the most important orders, especially the orders containing weeds and useful plants. The orders most studied are compositae, cruciferae, labiatae, caryophyllaceae, polygonaceae, lobeliaceae, amarantaceae, chenopodiaceae, and gramineae. Careful notes and drawings are made containing the results of investigations, in preference to making abstracts of chapters of books.

- "2. To acquire some knowledge of the classification of flowering plants, their names and descriptions, and how to make and use an herbarium.

"The object of the third course, of twelve lessons during the summer term, is to collect specimens (often in company with an instructor) and learn to recognize some of our leading trees and shrubs.

"The object of the fourth course, of daily work during the spring term, is:

- "1. To learn to use a compound microscope, finding the magnifying power, using a camera, etc.
- "2. To note the effects of some of the prominent reagents.
- "3. To acquire some skill in making sections.
- "4. Much attention is given to making neat and accurate drawings and notes.

"No real progress can be made in botany till the student learns to observe. Neatness begets accuracy. A sloven has no business to use a microscope.

" 'It is a mistake to suppose that he is the best teacher who gives most information in the shortest time with the smallest expenditure of labor on the part of his hearers.'—Farlow.

" 'The teacher of biology will keep the student on the right track, but let him find the truth for himself.'—Farlow.

" 'The pupil must earn his facts. These should be placed within his reach, but not within his hands.'—Goodale.

" 'The teacher makes the taught do the work, and occupies himself in showing them how to do it, and taking care that they do it.'—Rev. E. Thring, of England.

" 'Mere book knowledge of natural history is a poor basis of culture.'—Agassiz.

" 'It is a sham and a delusion.'—Huxley.

" 'Make frequent and thorough comparisons of two plants or similar parts of plants.

" 'In biology, laboratory work should precede any detailed course of lectures.'—Farlow.

" 'Details and facts before principals and conclusions.

" 'To learn to observe well, concentrate the attention for some time on a very small portion of the field, then in a similar manner study other portions.

" 'Patting one on the back and saying, "Don't you see this?" and "Don't you see that?" does not tend to produce a very robust mental development.'—Farlow.

" 'Under no circumstances should an instructor let a student who is a beginner discover what his own views are about any point to be studied.'—Farlow.

" 'Don't ask your neighbor, but work it out for yourself.'—Toumey.

" 'An eye trained to see is valuable in any kind of business.

" 'As an instrument of research the microscope now occupies a position which is second to none.

" 'To no science, historically speaking, is the agriculture of this country so deeply indebted as to botany.'—Morton's *Cyclopedia*.

" 'Good agriculture and horticulture are founded upon the laws of vegetable physiology.'—Dr. Lindley.

" 'Agriculture, horticulture and forestry are applied botany. Botany is the only sure basis of agriculture.'—President Abbot.

" 'In our whole course in botany, the student trains for power more than for knowledge.

" 'We may forget the facts, but the habit of observation and self-reliance acquired will remain.'—A Student.

" 'In its effect on the mind, Dr. Gray says: 'It is the best system of practical logic, and the study exercises and sharpens at once both the powers of reasoning and observation, more, probably, than any other pursuit.'

" 'To supplement the laboratory work by placing at any season of the year in the hands of each student, there are collected and preserved in about three hundred fruit jars, with formalin, large numbers of specimens; about two hundred lots of dry fruits and seeds; a campus containing six hundred species of woody plants; a botanic garden containing 200 species; from 1880-1890, a botanical museum; an arboretum containing about 150 species, not to mention the species and varieties in the fields, orchards and gardens. In a word, each student gets much of his training in botany at M. A. C. by individual

effort in observing, taking notes, making drawings of objects, in contrast with hearing about plants and by seeing pictures and reading the text. It is the German method learned from Louis Agassiz."

METHODS OF TEACHING VETERINARY MEDICINE.

Professor E. A. A. Grange, report for 1892:

"The Methods of teaching veterinary are, in the special department intended for that purpose, varied according to circumstances. In some instances the student is supplied with the raw material, and expected to prepare and describe it in a satisfactory manner; in others the professor in charge lectures upon certain subjects that cannot be well elaborated in a more practical manner, while the performance of operations, before the class, is encouraged and resorted to upon all possible occasions. To bring this part of the course before the reader in closer detail, a briefer outline of the various steps may be admissible, to wit:

"In the autumn term of the senior year we take up the subject of veterinary comparative anatomy, using the horse as the standard, and making comparisons of the other animals from it. Beginning our course with detailed description of the skeleton, taking each bone separately, and describing it, not forgetting to mention the diseases it is likely to be affected with, as well as other points of interest.

"To aid in this part of the work, our museum is provided with the skeletons of the horse, cow, sheep and hog, and for studying the teeth we have 67 models, and a number of original specimens, showing the changes which occur from birth to advanced years. Among others we have the lower jaw and teeth of a horse, said, upon good authority, to have been 54 years and 3 months old when he died. We then take up the joints, and after having given them as much consideration as our time will admit, we pass on to the muscles which clothe the skeleton and perform the various movements of the body. We spend several weeks over these organs, there being over 300 of them, all of which are more or less important, seeing that they are concerned in the many accidents and diseases to which horseflesh is heir. We are well equipped for doing this work, having the Auzou model of the horse, which separates into 97 pieces and shows over 3,000 points for anatomical demonstration, the muscles among other things. After we have disposed of the muscles, in the class-room, we then study them from the original animal in the dissecting room, finishing with a drawing of the part, after it is dissected by the student. In studying the muscles we pay particular attention to their names, situations, relations to contiguous objects, especially blood-vessels and nerves their actions and uses, and attachments.

"Briefly, much stress is placed upon laboratory work with specimens and dissections and models."

METHOD OF TEACHING MECHANICAL ENGINEERING.

In his report for 1892, Prof. L. P. Breckenridge says:

"The men have worked well in the shops. They have taken much interest in their work, and they have done work of value to our own and other departments.

"Previous to 1880, labor in connection with study was an experiment in this country. Today it is an established fact. In 1889, twenty-five states had introduced, or taken steps to introduce, this feature into the school

system. As city after city took up the question, special committees were appointed to investigate the subject, and report as to its advisability. In all cases the reports have been seemingly unanimous and enthusiastically in favor of this measure.

"The average American has so much to do that he will not take time to read what has been done, and often will not take the trouble to think out for himself problems that are foreign to his immediate welfare. The result is that it takes many good devices a long time to come into general use. Thus has it been with manual training.

"Let it be remembered right here that the labor which is done in schools having introduced a system, is not done in order that the student may become a carpenter, a joiner, a cabinet-maker or a pattern-maker, because he has worked in wood; nor a machinist, a steam fitter, a plumber, a tinsmith, a blacksmith, or a foundryman, because he has worked in iron.

"He will be more successful at any of these trades, but it is also demonstrated that he will be a more successful lawyer or minister, a physician or merchant, in fact, a man with a more cultivated and enlightened mind, which is the object of education. One more thought must be presented before examining carefully into the details of the system. All new work must needs be directed and explained. This can be done in many ways. It could be explained by the person in charge of the work, or a written explanation might be handed the student; both ways are full of faults. There is, however, one universal language intelligible alike to all. This language is drawing, and *this* is always used in connection with work to be performed in manual training. In order that this universal language may be understood, it is always necessary that drawing precede work which is to be explained by this means. Drawing is easily learned and is understood alike by German, Frenchman or American.

"How often it has been said, 'I wonder what Mr. S. will do, now that he has graduated from college.' What will he do? He is generally too proud to work with his hands, even if he could. He has been taught rather that there is an easier way to earn a living than by hand labor, that brains command higher wages than physical exertion, and so he goes out into the world, his head filled with undigested facts and formal knowledge. He can conjugate and decline, and is willing to show the world many of its mistakes and faults. What does he do? Lives on his father's money, or else begins at the 'bottom of the ladder' and, working with his hands, he may be able to accomplish wearily and slowly some good in the world.

"Let us go into some manual training school and watch the youth at work. This is the wood-shop. There are thirty boys here at work. Each boy has his kit of tools. The case containing the tools is a trifle above the work bench, and at each end is a vise, not the old-fashioned pin-in-the-bottom, wood-screw affair, requiring much time to change from one opening to another, but the modern, quick-opening, parallel-jawed vise, invented, I understood, by some former student of the Worcester manual training school. The tools are used only by one student so that he may reap the benefit of whatever skill he may acquire in taking care of them. Each case is numbered, and each tool in the case is stamped with the same number.

"Hanging before each boy is a blue print of the piece he is to make; there are at least one hundred different exercises from which to choose work. How carefully does each boy examine the drawing before him! How accurately does he measure and mark the piece he is producing! How many times he tries his square on this corner and that to be sure his piece is not

'out of truth!' Here is a finished joint. How perfectly the pieces fit together! It does not seem possible that these boys should produce such work.

"Notice the many positions the boy gets into with the different tools, the plane, the saw, the bit, the chisel and mallet, all calling different muscles into play. Notice how quickly he finds the center of that circle; and see that one, as he uses his radius to lay out a hexagon. Do you think he will ever forget the geometry he learned this morning, now he finds he can use it this afternoon?

"In the next room we find more boys at work, mostly on lathes, turning out all shapes, both for use and ornament.

"Let us now go down stairs. This is the foundry, and here we find more boys at work, forming the moulds into which the iron will soon be turned to form castings.

"Next comes the blacksmith shop or forge-room—smoke, noise and sparks. Look at some of the work that has been done. There are old files drawn out to a very small cross section and perhaps twelve feet long.

"Here are welds of all kinds, hooks, chains, rings, tools, chisels and all kinds of cutters. Each piece contains an idea and each piece is made from a drawing.

"In the machine shop we find many men at work at the bench and vise, filing, chipping, fitting. Others are at work at the lathe, plane, drill, milling machine or some other of the numerous machines. These men work ten hours a week in the shops. This amount of exercise is beneficial. It is a relief from the labor required by other parts of the brain in studying the principles of mechanics and in acquiring perhaps a knowledge of some foreign language.

"Do you think it is possible for a person to produce an object from some material, studying his drawings for directions, without training his powers of imagination?

"Accurate work leads to accurate thought. Each piece that is made is carefully inspected by the foreman of the department before it is accepted as complete.

"It is not possible for men to work so carefully, to get every object made so that it will be a true fit, and not reap some moral benefit from the habit of getting things right. The struggle for truth and accuracy in materials cannot fail to lead to a similar desire for honesty and accuracy in morals.

"How many times the student must exercise his judgment in turning a piece of wood in his lathe, and how soon he is enabled to turn out the desired piece with but a few measurements! He must strike the iron while it is hot, he must decide quickly where to strike, and how hard, or his work is impossible.

"Describe, if you can, some new color to a friend. Explain how quinine tastes to some one who has never tasted it. Tell me how sounds the zither, how smells the arbutus. Is it not evident that each sense has its function to perform?

"The eye sees, but how often does it fail to interpret rightly what it sees, how often it fails to *see* at all. Let the amateur botanist tramp through the woods and fields and let the expert follow in his tracks three minutes behind him. Look at the specimens in their two cases and answer me, is not the eye of the first in training so that it may see?

"The knowledge that comes to us through the hand is somehow the kind that stays. What we have done, we know can be done.

"It gives confidence to the mind to devise when we see our plans executed with success.

"In the choice of materials to be worked upon, the advantages of wood are that it can easily be shaped into a large number of forms.

"Neatness can accompany the work with wood. It does not require intense muscular action. In a given time a larger number of articles may be made.

"It is not expensive.

"The proper shape and angles for action are most advantageously studied.

"The advantages of iron work are:

This is an age of iron and its physical properties should be fully understood.

The ingenuity is often taxed to its fullest extent to accomplish the object in view.

The limits which practice imposes upon theory are often strikingly illustrated.

Difficulties of construction demand of the intelligent laborer cheaper methods.

It teaches progress, attention, accuracy; develops ability for design and invention.

"Before going any farther into the discussion, let me present to you the ideas of many whose names have long been associated with the cause of education, and whose words will have weight because their works uphold them.

"This new system of education was presented to the world by that good Moravian Bishop Comenius more than two hundred years ago.

"Here are some of his words:

"(1) 'Let everything be communicated through the senses and turned to present use.'

"(2) 'Let nothing be prescribed as a memory task that has not previously been thoroughly understood.'

"(3) 'Leave nothing until it has been impressed by means of the ear, the eye, the tongue, the hand.'

"(4) 'Let nothing be learned by authority, but by demonstration sensible or rational.'

"(5) 'Above all never teach words without things.'

"(6) 'The senses are the most faithful standards of the memory.'

"(7) 'Mechanics and artists do not teach their apprentices by disquisitions, but by giving them something to do.'

"(8) 'The study of language should run parallel with the study of things, especially in youth, for we desire to form men, not parrots.'

"(9) 'As human nature rejoices in doing, everything should be learned by practice, and the utility and bearing of what is learned should be made manifest.'

"(10) 'We do not speak to our pupils, but the *things themselves*, and everything should be taught by the things themselves, or, when these fail, by accurate representations of them.'

"Thus, in the seventeenth century, we were told how to teach, and now are we but just ready to undertake it, at the opening of the twentieth.

"Rousseau wrote: 'Reflect that the student will learn more by one hour of manual labor than he will retain from a whole day's verbal instruction. The things themselves are the best explanations.'

"Pestalozzi wrote:

'Man must seek his chief instruction in his chief work, and not allow the empty teaching of the head to precede the labor of the hand.'

"Froebel wrote:

'For what man begins to represent or to do he begins to understand.'

"Rabelaias wrote:

'Teach through the senses; inculcate independence of thought; train for practical life, develop mind and body equally.'

"Bacon wrote:

'Education is the cultivation of just and legitimate familiarity between the mind and things.'

"Huxley wrote:

'Zoölogy cannot be learned with any degree of efficiency unless the student practices dissection.'

"Herbert Spencer wrote:

'Science is organized knowledge, and before knowledge can be organized some of it must first be possessed. Every study therefore should have a purely experimental introduction, and only after an ample fund of observation has been accumulated should reasoning begin.'

"Dr. Maudsley wrote:

'To know the truth is necessary to do the truth.'

"Ruskin wrote:

'Let the youth once learn to take a straight shaving off a plank, or draw a fine curve without faltering, or lay a brick level in its mortar, he has learned a multitude of other matters which no lips of man could ever teach him.'

"In an article entitled 'The Co-education of Mind and Hand,' by Mr. Chas. H. Ham, there are many well presented points relating to this subject. 'Like thought and action the mind and hand complement each other. The mind speculates, the hand tests the speculations by experiment, the hand thus explodes the errors of the mind. The hand, therefore, not only searches after truth, but finds it.'

" 'Farmers and mechanics stand the scrutiny better than merchants. Civil engineers and architects are more competent in their professions than lawyers, judges, and legislators. Why? Because the former are trained in things, the education of the latter is confined to abstractions.'

"Manual Training was introduced into this country by Dr. Runkle, the first president of the Institute of Technology in Boston. He preferred to call the 'shops' the 'laboratories,' the same as the chemical and physical laboratories, but whatever name may be applied to them their object is the same—to furnish the hands with labor which shall enlighten the mind.

"From all sources comes the testimony of those having 'shop work'—that it builds up the body and the mind of those employed.

"It satisfies the natural activity of the youth and directs it toward a useful end.

"As a state, Michigan has much of which to boast. Her greatest boast should be that while busily engaged in building up her great natural resources she has not forgotten to educate her youth.

"In the agricultural college it is extremely probable that a large amount of work now done as manual training will eventually drop down to the schools below. All great changes in educational lines seem to begin at the universities and higher institutions of learning, and so has it been with this change.

"What effects this new system will have on existing methods of teaching

will be interesting to watch. Sure it is that changes will take place and when the natural method of mind cultivation shall reach its full development we may look back and wonder that so much time should have been devoted to learning so little. Manual Training is mental training; if it were not, it could have no place in any scheme for public education."

METHOD OF TEACHING DRAWING.

Professor W. S. Holdsworth, in his report for 1892, has this to say:

"The first day the student makes drawings, entirely as he may see best, of cubes, oblongs and cylinders. This is an endeavor to find out what the student knows about drawing and what are his ideas about representing such simple objects. These objects are named, dated and filed away. The next lesson is devoted to the study of perspective, endeavoring to deduce some simple rules. In all this work we use the blackboard freely. We approach the study of perspective in this way: The instructor places a skeleton model of a cube before the class, calls attention to the relation of certain edges to each other and to level surfaces. He then places before the cube a wire screen to occupy the place of the perspective plane and upon this traces a drawing of the cube. This is then placed before the blackboard, when the outline drawing stands out in relief. Comparisons are made. A number of studies of this kind are made from rectangular objects and certain simple rules of perspective are derived. Then the instructor makes drawings of simple rectangular objects, upon the blackboard, explaining methods of estimating angles, widths of surfaces and the use of the 'pencil in hand measuring;' always drawing from the object. Numerous exercises follow, the student working in outline from the object, sometimes resorting to making studies on the screens. As few technical terms are used as possible and no rules of technical perspective are given at all. Facts are observed and means of representing them sought and explained. Most of the principles of drawing are studied in this way.

"Great stress is placed on accuracy of observation and representation of objects, and care is bestowed upon the neat and tidy appearance of drawings."

SHOP METHOD AT M. A. C.

Professor C. H. Weil. M. A. C. Record, April, 1896.

"In the M. A. C. shops students make patterns of machine pieces from their own designs, make castings from these patterns, and finally bring the pieces to their finished or designed state in the machine shop; also prepare tools in the blacksmith shop to be used in machining the pieces.

"It will be perceived that the student is required to obtain a clear idea of the sequence of shop work, and operations involved in making complete constructions, also to obtain some degree of skill as a workman along several lines. While we do not aim to give complete training in the trades, still it is generally surprising to note the proficiency acquired by young men, as mechanics, under the system followed, especially in the case of those who are naturally inclined towards mechanical work. Inspection of the M. A. C. alumni catalog will show that many of the graduates of the mechanical course are successfully following lines of work calling for a knowledge of the various trades mentioned in this article, and the success of these graduates along such lines is some measure of the efficiency of the M. A. C. course in shop practice."

In his report for 1896, Professor C. L. Weil, says:

"We continue to place much emphasis upon exercise work in the shops, that is, work designed to illustrate specific points in the use of tools, and to give a large number of such exercises so that the student may gain a broad view of shop practice. We deem it advisable to attempt the manufacture of complete machines to a very limited extent only.

"During the past year strong efforts have been made along all lines to obtain increased efficiency, a special effort having been made to have the drawing-room work approach that of 'best practice,' and to strengthen the work along experimental lines."

The shops furnish rooms for practical and educational work for the students, three hours a day, without compensation, under the immediate supervision of practical and skilled workmen. The works are modeled after those at Worcester, Massachusetts. The labor is performed upon machines of utility, and not upon models, while the products of the shops were disposed of for the benefit of the mechanical school.

Professor L. H. Bailey, in 1888, at once showed his clear comprehension of teaching horticulture and landscape gardening by the admirable synopsis given in his report:

"I transcribe from the workbook, the following routine of work, selected at random, for a student during July: 'Pruning apple trees; weeding onions, mowing with a lawn mower, potting strawberries; shovelling earth, cleaning apple trees; pruning young wood from vineyard; picking peas; cleaning drive; cleaning and trimming drive; ditto; ditto; scraping apple trees; raking on drive; ditto; ditto; pruning grapevines; raking and trimming drives; ditto.' Two-thirds of this was fairly illustrative. Another instance for the month of June: 'Killing currant worms; poisoning cabbage worms; ditto; ditto; repairing bridge on lawn; planting apricots; applying commercial fertilizer to cabbages; working on cold-frames; pruning apple trees; planting various vegetable seeds; poisoning potato bugs; ditto; ditto; removing cold-frames; poisoning potato bugs; ditto; transplanting celery; picking gooseberries; picking peas.' Student had expressed a desire to kill injurious insects."

The trouble is that time was too short to make it possible to instruct students according to the plans of an ambitious professor. This was true in every department, requiring a constant selection and readjustment of subjects.

Besides lecturing at farmers' institutes and attending fairs, the professors take pains to make use of students in the capacity of judges of live stock, fruits, flowers and vegetables. Here is an example: Hon. C. W. Garfield, class of '70, was for about ten years the efficient secretary of the State Horticultural Society. At a meeting of the society, held in Lansing, Professors Cook, Bailey, and Beal each introduced some of his students who had prepared something for the program. Mr. Garfield, in his report later, writes: "One of the most pleasant hours of the convention was occupied by members of Professor Beal's class in botany. Seventeen young ladies and gentlemen, fresh from original work in the botanical laboratory, gave three-minute talks to the assembled horticulturists upon topics which they had been studying by the aid of the microscope. They are taught to be independent of what has been printed, and are placed at once in the field of original investigation. The glimpse they gave us of their methods spoke well for the work Professor Beal is doing.

"The drawings made by the students and employed in their explanations were admirably executed, and on the whole the entire exercise was as interesting as anything ever presented to the society."

After returning home from the horticultural meeting, Secretary Garfield wrote: "As I recall the exercises of your students before our society, I am filled with the idea that it would be well to have the whole thing go into our report, illustrations and all, if the matter can be prepared under your supervision. There is nothing like it in any report published. My thought is not to enlighten people so very much by the facts which these young people presented, but to popularize your method of work."

The cuts were engraved and with the text appeared in the next report of the Society in 1886.

CHAPTER XII.

MANUAL LABOR BY STUDENTS IN AN AGRICULTURAL COLLEGE.

Compulsory manual labor for wages has been tried more or less by many schools and colleges of this country, but by none, perhaps, has it had a longer and more thorough trial than by the Michigan Agricultural College. A provision requiring it was made February 12, 1855, in the act of the legislature establishing an agricultural school, and since the first class entered in 1857, for nearly forty years, the practice was steadily maintained of requiring



Judging stock.—The Shaw boys beginning young.

twelve to fifteen hours per week manual labor of the students. Wages were paid with the exception that since the establishment of a course in mechanical engineering, in 1885, although students of that course were all required to labor in the shops for eight hours a week, they received no pay for the work, as it is all educational in its nature.

Perhaps this topic is treated too much at length, especially since it concerns a dead issue, but manual labor was, at the start, made one of the funda-

mental features of the College and was for a long time a prominent problem.

With a total attendance of only 82 students during the year 1868, probably running down to 50 or 60 at certain times, the President's report contains this regarding student labor:

"The students are required to labor on the farm, garden, or at mechanical work, a certain portion of each day. The system has proved itself to be a good one, and gives better and better satisfaction to both officers and students, from year to year. With the instruction which accompanies the labor, the student obtains much valuable information of a practical character, which could be obtained in no other way."

I have no doubt of the truth of this statement, but the problem of student labor changes very rapidly and becomes more difficult as the number of students increases; and this will usually appall the treasury, requiring that an expert foreman be employed to each twenty students.

Dr. Kedzie once said students were never happier than when detailed for a day's work under Dr. Miles in laying out some difficult ditch or surveying some field. One reason why he was so popular was that he was not afraid of soiling his hands. His favorite uniform for field work was a pair of brown overalls. The late Judge Tenney came to a gang of students at work on a troublesome ditch and enquired "Where can I find Dr. Miles." "That man in overalls down in the quicksands of the ditch is Dr. Miles." The professor of practical agriculture was in touch with the soil. This might have been well, but every good manager of large gangs of men at work knows that it is a mistake to labor much, if any, with his own hands.

Since his first connection with the Michigan Agricultural College in 1870, for forty years, the writer was uniformly one of the most tenacious of the members of the faculty to uphold in every way the practical or industrial side of the agricultural course, indoors and outdoors. For eleven years he had charge of horticulture, as well as of botany, and during that time half or more of the students were assigned to him for oversight of their work. During that period and ever since (to 1910), he has given a good deal of attention to the subject, and asserts that there has been no one thing at the College which has been the cause of so much trouble as the compulsory paid labor,—especially where students engage at ordinary work.

The following are some of them:

1. It was often very difficult to find profitable work at some seasons of the year.

2. The interruption of two short vacations in the growing seasons interfered with plans for continuous care of pieces of land.

3. Students all worked at the same time of day, beginning at one o'clock p. m., and on this account there were often too many of them to work to advantage. They seldom completed jobs they began, and thus lost interest.

4. As the numbers were large there were never enough skillful foremen, so that the students got into primitive methods of work, and formed bad habits.

5. As the student received pay he was earning something, and this often led the foreman to keep a man working at what he could do best, as is the custom in most factories, instead of frequently changing the kind of work, so that the student might gain skill in many directions. Besides, he almost always preferred to work at what he could do best, thus insuring the highest rate of wages. His sentiment was, "put me anywhere that I may perform good work, then I shall get the highest wages."

6. Students were much more sensitive about receiving less than the maximum rate of wages, than they were about receiving low marks for recitations in class. They often stoutly questioned the judgment of the foreman in placing an estimate on their labor, but usually acquiesced in the grade of marks given for recitations or examinations.

7. Too often the student felt that he accomplished little, and was working merely for the name of the thing.

Notwithstanding defects and difficulties of management, that system of requiring labor was far better than absence of manual training during the college course, but it long seemed clear to me that the method could be vastly improved.

One reason for requiring some manual labor in connection with a course



House of the Union Literary Society, near Wells Hall.

of study is this: If a student performs no labor during his college course, he is not likely to return to labor when he leaves the College. The athlete who can jump, run, kick, vault, row, swim, skate, or throw a ball better than most of his associates and neighbors, delights in these sports, while the man who is unsuccessful in these things makes little effort, and never evinces much interest in his own attempts.

The young man who can harness a team properly, turn a straight and even furrow, shear a sheep quickly and to perfection, build a good haystack, mark out the land for corn, and run a cultivator so near the straight rows that scarcely a line is left uncultivated, will be proud of his achievements. He will economize time and strength and make a success of his work. So in the numerous details of work in horticulture, where such mechanical skill and alertness are required for excellence, if one lacks training and success in these manual operations and dislikes the work he continues to

display that lack of skill. The same is true in the class-room and laboratory; if after a thorough training under the eye of a skillful teacher the young person becomes proficient in certain directions, he enjoys his studies.

We suppose a course in an agricultural college is to fit a man for farming in some of its numerous departments, but no matter how well he understands the theories of the subject and sciences pertaining thereto, he is not likely to engage in the business unless he also possesses a good knowledge of most kinds of manual operations pertaining to farming, and if he ventures to engage in the business without possessing this manual dexterity, he will have many a hard row to hoe, very likely become discouraged, and sooner or later abandon the farm, because his training was unsymmetrical and incomplete.

To make the most of manual labor in an agricultural course, it should all, or nearly all, be performed with a view to acquiring skill, and not to the immediate returns. Skill in most farm and garden operations may usually be acquired in many directions if instruction is given and accompanied by practice. This practice is as much a necessary part of a thorough agricultural education as are the clinics for a young surgeon, or the practice with test tube and reagents for the chemist, or the correct use of a section cutter and reagents for the student of plant histology. The hand is trained with the eye and the mind, each helping the other, and without both the young person is not well qualified for success.

If a candidate is found already skillful in some kinds of work, I should by all means pass him accordingly, and not compel him to repeat the work as a condition of attendance. I should permit and even encourage him to acquire this skill elsewhere than at college, during the vacations or before entering. In case young men have never engaged in farm work, I should insist that they acquire skill in certain operations common to farming before entering the college, or during vacations early in the course. It is too much to expect a college course to include the teaching of all the elements of the handicraft of agriculture.

If students desire to work for pay and it can be supplied, let them work, and be rewarded according to their skill and faithfulness, but this should not be required.

You will conclude that the writer's plan would be to exact of every student who enters the agricultural course, without exception, the passing of a rigid examination in the various parts of farm and garden work, not expecting him to receive pay for work while learning how to perform it.

A course of manual training on farm or in garden cannot be so easily or pleasantly managed as a course of practice in shops for the degree of mechanical engineering, but it is practicable. In the shop, the student has a definite place to work, rain or shine, and is not exposed to mud or sunshine. The tasks can be more easily defined, and perhaps his success more easily gauged by some standard. It is needless to say that the examination for testing the proficiency in farm labor should not be oral or in writing, but consist in actually performing many tasks assigned for the test.

For thirty-three years, closing in 1910, the writer managed a botanic garden, where considerable of the labor was performed by students, for wages. During the forty years while at the College, I was studying at times, the easiest and quickest method of performing tasks and no matter who was at work, prided myself on my ability to show anyone at least one good way to do each kind of work. An effort was made to induce the students to think of a good method for each task, what implement was the

best for each part of the work, and if no implement was in the market, the method was (as practiced by Frank Gulley, '85) to know how to fix it or to make one that would work.

My practice was to show anyone if necessary how best to select and how to handle any implement for ease and despatch, whether it was the scuffle hoe, the rake, the spade, the dung fork, the shovel, lawn mower, edging knife, edging mower, tree pruner, or wheelbarrow; also exactly how to select, cut, take up, handle and lay sods after the soil had been properly pulverized graded and packed, and how and when to pack the sods firmly.

Probably for these reasons, at least for the last thirty years of my service, the student who could get work at the garden under my supervision, considered himself fortunate, for he learned to do things well and expeditiously with the least expense of effort.



House of the Eclectic Society.

The reader has noticed that large numbers of persons during the early history of the College and previous to the opening for students, mentioned the importance of manual labor as an important part of an agricultural education, and they were right in their estimate; though most others insist that the time of a student in college can be employed to better advantage than in learning how to use a hoe, a shovel, a rake, or some more complicated machine. While preparing the history of the Michigan Agricultural College, I consider myself very fortunate to be able to show the need of good instructions in handling so common an implement as a shovel,—that it is extremely rare that one can find a person who knows how to select and properly use a shovel in moving sand, ashes or coal.

I quote a few sentences from an article in the *World's Work* of February, 1911, pages 14 to 45, by Arthur W. Page, concerning scientific management as learned and taught by Frederick W. Taylor.

"Scientific management is a system of conducting industrial plants which has been evolved by a successful man in a successful business. It is the

result of twenty-six years of work by Mr. Frederick W. Taylor in the Midvale Steel Works in Philadelphia.

"After Mr. Taylor had spent many years in building up "scientific management," piece by piece, in the Midvale Steel Works, he was asked to introduce it into the works of the Bethlehem Steel Company. At that plant there was a great yard, approximately two miles long and half a mile wide, in which there were about six hundred men who shoveled sand, coal, ashes, etc.

"Most shovel contractors undoubtedly believe that the way to shovel is to shovel, and that there is no more science to it than a laborer will acquire by practice. At Bethlehem the men supplied their own shovels, which



House of the Hesperian Society, former residence of C. D. Woodbury.

they chose to suit themselves, and they worked, each man according to his own method.

"Mr. Taylor's analysis showed that a first class man working at normal speed could handle more material on a shovel that held a 21-pound load than on any other. A lighter load necessitated too high a speed, and a heavier load meant too great a strain on the man. It is hard to say whether it is more remarkable that Mr. Taylor should have thought to do such a thing or that no one else had thought to do so before.

"Mr. Taylor picked out the men and had them instructed one by one how to work and how fast to work.

"At first sight it would seem a useless waste to have a tool house with many different tools for men who had been accustomed to supplying their own shovels, and a further waste to have a lot of men planning work for a gang of shovellers, and others instructing and timing them, and more folly yet to investigate the "science" of shovelling—as if a man who had shovelled

for fifteen years would not know how to do it. Certainly it all would have seemed foolish if it had not been for the results, which were these:

The number of laborers was reduced from.....	600 to 140.
The average number of tons handled per man per day was increased from.....	16 to 59.
The average earnings per man per day rose from.....	\$1.15 to \$1.88.
The average cost of handling a long ton (2,240 lbs.) decreased from.....	7.2 cents to 3.3 cents.

“In the 3.3 cents per ton for cost of handling is included the wages of



House of the Olympic Society, formerly owned by Professor Holdsworth.

all men in the planning department, the timekeepers, etc. During the first six months (when the system was further perfected) the saving was about as much more—or a total of approximately \$72,000 in eighteen months. This had been accomplished without overworking the men.

“Every man had a full instruction-card telling him all that he needed to know about his job. The materials which he was to work with and his tools had been brought to him. Where they saved time was in knowing what to do and in having the proper facilities for doing it. They were not wasting time going after tools or asking questions of the foreman.

“Such training as Mr. Taylor practiced would give the men in the ranks of industry the knowledge which everyone now agrees they woefully lack.”

In teaching students how to work, the time is too limited to go over everything; selections of topics must be made.

Regarding educational labor without pay, President Abbot in his report for 1880 said:

"The problem,—how to make the labor more educational, and yet make it earn the wages that is paid—has been frequently discussed by the officers more immediately in charge of labor, and several times in the faculty at large. Dr. Beal takes the juniors out in sections almost every afternoon to work for an hour under his immediate instruction, in such a way that each goes two afternoons a month. For this labor they receive no pay."

So timid were members of the faculty regarding this kind of labor, that, to start with, they were unwilling to permit more than a very limited amount of it.

Among the resolutions adopted at the meeting of the Alumni Association, October, 1885, is the following:

"Resolved, That we reaffirm our unabated faith in the labor-system of the College, and heartily endorse the views expressed by President Willits concerning it."

COMPULSORY MANUAL LABOR GIVING WAY.

In the Speculum for August, 1887, are these sentences:

"The work system still continues to be a subject of discussion among our students. Ever since the opening of the College, daily attendance at work has been compulsory for all able-bodied students, except during a few weeks in the senior year just previous to Commencement.

"A careful study of the course of instruction offered at this College will convince any one that students must work both on the farm and garden at some time during their course. Horticulture and agriculture can not be thoroughly taught unless this plan is followed. To reap any benefit from these studies the student must become familiar with the methods of work and experiment, and this he can only accomplish by engaging in them himself. So far as the compulsory work is educational, it is of value to the student, but as now conducted the afternoon work is almost entirely confined to the two branches just named.

"During the fall term all seniors who take chemical physics will be excused from manual labor, as the recitations will be held in the afternoon. Juniors will work as now, except that during the latter half of the term they will have two afternoons a week for work in anatomy. Sophomores will work as now during nine weeks of the term but will have three weeks of work in the blacksmith shop, while the work for freshmen will be practically unchanged.

"Seniors who take horticulture during the spring term will work in the horticultural laboratory, while the work in other classes remains about the same. Military drill will be compulsory for all students this term."

Professor L. H. Bailey in his report for 1886 says:

"I adhere to the principle that the primary object of student labor is to instruct the student. So far as possible, this labor should precede the lectures. No one can acquire the art of budding from a lecture. The student must perform the operation with his own hands. A man never learned how to build an engine from lectures alone. I lectured two days upon the practice of root grafting, whittling the stocks and scions and making particular mention of all the minor movements of the operation. The next day, when these students took the knives and material into their own hands, I was obliged to repeat all my former instructions."

While L. H. Bailey was a student, I had given to him and others of his class three lectures on pruning grapes, illustrating the subject by taking large vines into the class room. Later in the vineyard, when I gave each

a knife for work, he hesitated and asked questions, and after a while said, "This is worth more than all of your lectures." Of course he was right.

The advantages to the student in attending a small college have often been mentioned by many teachers. The student comes in contact with the head of a department and is not taught by an inexperienced instructor; there he gains enthusiasm for some lines of study, which is proportionally less likely to occur in a large university. In the Michigan Agricultural College the same discrepancy is apparent. Note the unanimity of the early teachers in regard to the success of compulsory manual labor, when students were few in number. Notwithstanding stout resolutions by the Board of Agriculture regarding the enforcement of labor by students, in 1891 you will observe, as the program became more congested and the students increased



House of the Phi Delta Society, formerly owned by A. C. Bird.

in number, the stumping and ditching mostly done, that study after study crept into the afternoon, until gradually laboratory work took the place of the previously paid labor. Presidents, Williams, Abbot, Willits and Clute had gone, Dr. Miles had long ago departed, and Dr. Beal had ceased to be in charge of much student labor after 1882. A new president, Gorton, and a new professor of agriculture, C. D. Smith, found it easier, and we admit, found it necessary, to drop some of the old methods, and those members of the faculty not in charge of the labor gradually acquiesced in the inevitable change.

Note the report of the professor of agriculture in 1895: "We are attempting, as outlined in my last report, to do a large share of our teaching in the hours of student labor. We believe that a change of emphasis from didactic class-room lectures and recitations to what might correctly be called laboratory work in the afternoon is, from every point of view, de-

sirable. In the matter of live stock, for instance, while the lectures on the different breeds and their peculiarities continue in the freshman year, supplemented by the lectures on stock-breeding and stock-feeding in the junior year, the most valuable study of live stock is made in the yards and fields in the afternoon work of the first term of the sophomore year—when three weeks, two and one-half hours each day is exclusively devoted to judging animals."

In 1870, the students in Iowa Agricultural College numbered one hundred and ninety-two, all of whom labored three hours daily, as required by the state law. The labor was said to be managed with great tact and skill.

On June 4-5, 1895, when the College was over thirty-eight years old, during the latter part of President Gorton's administration, the State Board of Agriculture among other things, resolved:

That we hereby affirm our allegiance to the system of compulsory labor provided for in our organic law, and assert that we have the authority in the interpretation of that law to provide that kind of manual training which, in our judgment, will best prepare the young people studying at our College for a successful agricultural career.

"That the faculty of our College are hereby instructed to enforce the provisions of the law relative to manual labor in our College as a feature of our course of instruction that applies to every student enrolled at the College, whether regular, special, summer or winter, who enjoys the advantages of our course and accepts the tuition of our corps of instructors, and we invite the faculty by recommendation to assist this Board in so arranging our system of manual instructions as to be of the highest value in carrying out the object sought in our scheme of education.

"That in the assignment of labor no special line of work done for any attache of the College or for any department of the College shall be allowed to be substituted for manual labor in the regular course unless equally valuable to the regular required labor in subserving the cardinal purpose of the institution.

"That we earnestly entreat the faculty, the students and all attaches of the College, in conservation, action and influence to be loyal to the view of our labor system in the college course as expressed in these resolutions."

At the time these resolutions were passed, during hours for labor of students from one to four in the afternoon there were classes for the mechanical students as follows: civil engineering 1 day, field practice, thesis work 10 hours per week; laboratory in strength of materials $2\frac{1}{2}$ hours per week; shop practice 10 hours per week; chemical laboratory 4 hours per week; physical laboratory 2 hours per week. The resolutions adopted perhaps refer to students in the agricultural course, though this is not very clear.

The fact that down to 1895 and earlier, every year or so, some one of the faculty, having to look after student labor, proposed what he termed a change in student labor indicates that the work was troublesome and unstable.

In his report for the year 1882, President Abbot said, "Happy indeed are the College officers who are free from the bother of students' labor and students' board. I reiterate what I have heretofore said, that the students work as they study, and that they study here as well as in other institutions."

In 1882, I stated in the Rural New Yorker that, "Considering these difficulties, I believed the time would come when compulsory work for pay would be abandoned. With numerous trials by others who were earnest, ingenious, and persistent, the difficulties continued.

I quote portions of letters furnished by request in 1891 from men of experience in agricultural colleges.

Professor Thomas Shaw, Ontario Agricultural College.

"This is confessedly a most difficult question. While nearly all those who have studied it are agreed that some labor should be done by students attending these colleges, there is by no means a consensus of opinion as to the amount of it that will best serve the intended end, as to the best mode of distributing it, and as to the amount of the remuneration that should be given for it.

"There is no doubt in the mind of the writer that labor should at the present time be required, to some extent, from students who take a full course at these colleges, for the reason that unless they do some manual labor it will soon become distasteful to them."

Professor S. F. Maynard, Massachusetts Agricultural College, as reported in the *Speculum*, June 10, 1891:

"Agriculture, which is the most complicated of all of the arts or industries of man, requiring a knowledge of a greater number of the natural sciences than any other, is no exception to the conditions which exist in other industries, and if in all other industrial schools and colleges it is found that practice must go hand in hand with the study of the sciences from the book, it follows that the best results will also be obtained in those agricultural colleges where manual training is an important part of the curriculum."

When manual labor ceases to be performed altogether, a habit of the system is induced which makes it difficult to take it up again.

Unless the young man who intends to farm is diligent in acquiring the art of performing manual labor well at the proper age, the time for doing this soon goes by and like the snow which melted at the close of last winter, it never comes again.

It is very clear then that the question of paying for student labor will one day become so burdened with difficulties as to lead in all probability to its abolition.

President Oscar Clute said: "This system, begun with no experience, has grown with the Michigan Agricultural College, and has become one of the strongest factors in its prosperity."

President George T. Fairchild, Kansas Agricultural College, who also was previously a professor in Michigan Agricultural College, wrote:

"Not the least is the cultivation of respect for energetic effort and consequent appreciation of the actual toil needed in every kind of life. Another is the encouragement given to readiness in any undertaking without reference to the amount of physical energy required. When the routine of life includes such labor, toil anywhere seems easier to undertake, and muscular exertion is a pleasure rather than a hardship. Again this helps to develop that practical judgment which makes the efficient man in every calling."

While Professor of Agriculture in 1890, E. Davenport wrote:

"This is, without doubt, one of the most difficult features of our work, and, withal, one of the most valuable. The whole field of agricultural instruction is so new, its principles are so little understood and so illy classified, that our work is largely that of pioneers. That nobody has yet found all the best methods is evident to the most ordinary looker-on.

"On the whole I think I may safely say that the past year has been fairly successful. The student pay roll has doubled under the same rate of pay. Applications for excuse grow less and less frequent, and but few betray a

desire to avoid the daily labor. We rarely excuse, and are but rarely urged to do so.

"While much of the student labor is not what it should be, nor what I believe it may be made, I am glad to report that very much indeed is of a high order of excellence. Students have been given responsible work.

"While I shall never rest satisfied till the student labor is greatly improved, I may say in general that I find the utmost willingness, and that my relations with the students have been of the most pleasant kind. What seems to have been accomplished is more satisfactory and has been more pleasant than I dared in the beginning to hope."

Professor Taft, having the duties of the horticultural department, with a foreman, a florist, and a hired man or two to help him, was expected to plan work for one hundred and twenty-five students from one o'clock till four each school day. The teaching force was utterly incapable of handling such a crowd. The situation was disheartening, demoralizing, and this was a sample of the "labor system," usually so called. In 1889 there were twenty to thirty acres of lawn, nearly six miles of walks and drives, besides shrubbery and trees to be cared for; then came hundreds of details of planting and testing large numbers of varieties in the vegetable garden and fruit garden. No wonder some things were not in tip-top order to suit the eye of a critical visitor—and great numbers of visitors, including professors, felt amply competent to find fault, because everything was not done right and on time. The writer knows how it is for he once had such work to look after.

CHAPTER XIII.

ORGANIZATIONS, MOSTLY BY STUDENTS.

Some may think this chapter unduly long, but the ground covered is one that interests most students in a high degree.

LITERARY SOCIETIES FOR MEN.

In the catalogue for 1862, the following statement appears:

"The students have organized two Literary Societies in the institution; The Cincinnatus Lyceum, and The Sons of Demeter. The exercises in these societies consists principally of discussions, essays and lectures." The Cincinnatus Lyceum was active in 1873.

The next year, 1863, we read, "The students have organized a Literary Society in the institution."

Whether the imposing names adopted in 1862 caused the disappearance of the two societies then announced or whether they died from some other cause, we are not informed. In 1866 and for 42 years, 1907 inclusive, the following is the uniform statement:

"The students have organized several literary societies in the institution. The exercises consist principally of discussions, essays and lectures." The names of the societies are not given. The title "Agricultural College Lyceum" is used twice or more in the Bubble, a monthly paper printed May 30th to October 24, 1868.

In 1868 some students formed a society, calling it The Stoical-Pen-Yanker's Society. They published a few numbers of a paper called the Bubble. See "Publications."

The Philomathesian Society was active in 1873, when established, but when it became inactive is not now apparent.

The Excelsior Lyceum, a freshman society, was organized in 1876, but apparently was short-lived.

The Union Literary Society was founded April 8, 1876 by members of the classes of '76, '77, and '78. W. C. Latta, '77, President, W. K. Prudden, '78, Secretary. It is thus the oldest literary society of the college now existing. For some years the members held their meetings in class room A, in College Hall. They then secured the rooms under the west ward of old Wells Hall, where they remained until the summer of 1890, when the U. L. S. hall, between Wells and the greenhouse, was dedicated. The Union Literary Society is the only society at this College possessing a building of its own on the campus. The society pin was designed by F. E. Skeels, '78.

The name Students Organization is a rather indefinite term used in the Junior Annual in the year 1889. This organization was founded some years before for taking action on a variety of subjects apparently with duties pertaining to table board. The same year appear a foot-ball association and tennis clubs. In 1895 the chief duties of the Students Organization seemed to be to look after everything pertaining to athletics. It is difficult to follow all the changes that have occurred.

Eclectic Society. This society was organized by a number of students, March 12, 1877. J. R. Monroe, '78, President; P. J. Lewis, '78, Secretary. Its rooms, beginning in 1878, were located on the fourth floor of Williams Hall, east end. In 1906 it rallied its forces, and began to build, completing in 1907 an imposing brick building on the plat of Oakwood. The late A. C. Bird '82 and F. C. Kenney were foremost in carrying the project through.

COLLEGE PUN AND CONUNDRUM CLUB.

A column or two of the initial three numbers of the *Speculum*, first published in 1881, were given up to humorous matter under the above headlines. The leading spirit, if not the whole force of the "Club" was H. W. Collingwood '83, some of whose effusions would do credit to the columns of *Life*. For many years, the *Rural New Yorker*, of which Mr. Collingwood has long been the editor, contained humorous and witty sketches and verses apparently giving vent to surplus thought that could not be held back. Collingwood is the most trenchant writer that the College has produced. Below are samples:

"Mr. Editor—Since the last report the Club held its regular meeting at midnight in the tower of Williams' Hall. It has become necessary for the Club to make use of this almost inaccessible resort, and to meet at this unusual hour, on account of the threatened violence of some unsympathetic students.

"We give the following as a specimen of the fearfully and wonderfully made puns that come from our senior class—the villian is still at large:

"If I should wake up in the night, and hear my partner sigh in his sleep, and fear that he was sick, why would it be like a chemical combination? Because it would be "fear o'sigh at night." (Ferro-cyanide.)

Ye Chapyle Belle.

"At ye lone houre of night, 'twas a terryble syght,
When he called us out to some fantastyc ryte.
And ye Freshy-fresh wakened with sudden affryght,
To heare ye mad peale of ye belle.
And there in his garments so ayry bedyght,
At ye sound of wild yells, and ye belly-belle-belle,
He tremblyngly nayled ye doore of his celle."

The Olympic Society. Location—fourth floor of Williams Hall. Organized in September, 1885—largely through the initiative of A. L. Marhoff, '89, F. L. Wigglesworth, '86, President. Though called a literary society, its whole purpose as expressed in the constitution, was to improve the intellectual, moral and social qualities of its members. Each of these objects received due attention, as is shown by its record both present and past. They occupied their room in Williams Hall in 1887. At present the members own a house on Abbot road.

The Hesperian Society was organized March 16, 1889; the meetings were held in several places; and in 1890 the members met at 7:30 every Saturday evening in the society rooms in the basement of the west ward of old Wells Hall. In 1905 they met in a house rented in Oakwood; in 1911 the Society purchased the dwelling of C. D. Woodbury.

The Columbian Literary Society was organized in March, 1892; W. M. Fulton '95, President, W. J. Cummins, with '94, Secretary. Regular meet-

ings were held every Staunday evening in their rooms in the basement of the middle ward of old Wells Hall; later in April 1897, they were assigned the former nice rooms of the Delta Tau Delta fraternity in the fourth story, west end of Williams Hall. The society is building a commodious house east of the College orchard.

The Phi Delta Society was organized in March 1898, with Homer B. Clark, '00, President and Adorf B. Krentel '99 Secretary. This society consisted of the members of the Phi Delta Theta Fraternity when that was abandoned. Their room was in the basement east end of Wells Hall; in the fall of 1907 they moved into a home on the North Abbot Road; in 1912 they purchased the home of Mrs. A. C. Bird.

The Debating Society was organized in the fall of 1901; meetings are held weekly; No. 7 in College Hall is often too small for the crowd.

The Prohibition League. This association was organized April 1, 1902 as The M. A. C. Prohibition Club, later changed as above. As the name indicates, the object is to discuss various phases of the liquor question.

The Eunomian Literary Society was organized October 10, 1903, under the name of Sigma Mu Beta, and in 1904 that name was changed to Eunomian. In the fall of 1906, the members secured a room on the fourth floor, Ward D. of new Wells Hall; in the spring of 1907 they secured rooms in Williams Hall.

The Sigma Mu Beta society organized October 10, 1903, meeting in the rooms of the Y. M. C. A. in Williams Hall. In 1904 the name of the society was changed to Eunomian, which see.

The Aureorean Society, was organized September 30, 1905 in College Hall; a year later they secured rooms in Ward E., new Wells Hall.

The Forensic Society was organized October 19, 1907 in the chapel, soon securing rooms in new Wells Hall, Ward F.

The Delphic Society was organized in the chapel on November 7, 1908; on March 20, 1909 moved to rooms in Ward A. New Wells.

The Athenaeum Literary Society was organized 1909, rooms in Ward C., new Wells Hall. Their rooms are rented under the name of Campus Club.

The Ionian Society was organized March 5, 1909 in College Hall; the next spring they took rooms in Ward D. new Wells Hall.

The Cosmopolitan Club was informally begun in the fall of 1909, and formally organized January 18, 1910, with E. C. Lindemann, President; M. C. Ellman, Secretary. In the main, the members are students from different foreign nations. They are using the rooms of the Y. M. C. A.

The object of this club is to cultivate social intercourse between the students of the different nationalities, and further, as its constitution states, "to study the conditions of, and to promote a better understanding of the political, social and cultural problems of the various countries, and thereby foster the spirit of universal brotherhood."

The local chapter has been admitted to the Corda Frater National Association of Cosmopolitan Clubs, a great factor working toward international peace.

The Phylean Literary Society was organized in room 6, College Hall March 1910, soon obtaining rooms in Ward B new Wells Hall; in 1913, they occupied the Dixon house, next west of the Peoples Church.

The Delta Club was organized in 1910; in 1913, the society occupies the Hewit house.

The Round Table Club was organized in 1910 mainly for the three upper classes, to afford practice in after dinner speeches; meetings held once a

month. Membership is limited to twenty and joining is by invitation; discontinued in 1912.

The Penman's Club was organized in 1910, chiefly for those interested in work in connection with newspapers and magazines. Every year it has a dual-purpose banquet; discontinued in 1912.

The Sociological Club, was organized 1910 and consists of a few members of the faculty and others most of whom are juniors and seniors of the College. Membership is by invitation only and is limited to 25 men, holding meetings every two weeks during the college year; survived two years.

The Alpha, Freshman Society. On Saturday, December 3, 1910, this society was launched with about twenty-five members, a twin to the Beta; lasted two years.

The Beta, Freshman Society. On Saturday, December 3, 1910, this Society was launched with about twenty-five members, a twin to the Alpha; lasted two years.

The Glee Club was organized October 31, 1911 with John A. Holden, President; W. C. Corey, Secretary; Ira Westervelt, Treasurer; Mr. Fred Killeen, Director.

The Mandolin Club was organized in 1912. The name is an indication of the object of the society; later combined with the Glee Club, meeting in the chapel.

The Trimoirra Literary Society was organized in 1912, with rooms in Ward D, Wells Hall; members are chosen from sophomores, juniors and seniors.

LITERARY SOCIETIES FOR WOMEN.

The Feronian Society was organized on March 20, 1891 with Mrs. Fred Hillman, '91, first president. For ten years they met here and there Friday afternoons, mostly in rooms of some of the literary societies, until the completion of the Woman's Building. The society pin was designed by Miss Jessie Beal, '90.

The Themian Society was organized, January 8, 1898, largely through the efforts of Irma G. Thompson, 1900. Meetings were held in the chapel for a time, then in September, 1898, in the rooms of the Phi Delta Theta Fraternity; in 1910 they used rooms of State Board of Agriculture, now occupied by the Entomological Department; in 1900 they took rooms in the Woman's Building.

The Sororian Society was organized in the autumn of 1902; occupying rooms with the Feronian Society in the Woman's Building.

The M. A. C. Women's Club was organized in the spring of 1903, with Dean Maude Gilchrist, President; Mrs. C. B. Collingwood, Secretary. Membership is unrestricted and is open to all women of the neighborhood, i. e., of the campus and village. Meetings are held every two weeks during the college year.

The Ero Alphian Society was organized March 15, 1904, Bertha Hinkson, '05, President; Grace Owen, '08, Secretary. They meet in the rooms of the Themian Society.

The Idlers was organized in the fall of 1908 to improve the social life of its members—went out of existence in 1911.

The Sesame Society was organized in 1910, and accepted by the faculty February 11, 1911.

The Glee Club (Women's) was organized January, 1912 with Miss Louise Clemens, President; Miss Blanch MacGregor, Secretary and Treasurer; Miss Louise Freyhofer, Director.

LITERARY AND SOCIAL.

(Men and Women.)

Shakespeare Club was begun in 1898; members of the faculty, their wives and a few others organized a club which met weekly from house to house; ceased to exist in 1906.

ORATORICAL ASSOCIATION.

"This association," as described by the Wolverine of 1901, "was organized in the fall of 1887. Its first object was to prepare for an inter-collegiate oratorical association of the state which was then in the process of organization. The first idea was to hold contests in oratory at the same time as the inter-collegiate athletic contests, but this was not carried out, as it was found impractical. At the time of organization there were only three societies in the association, viz.: Union Literary, Eclectic, and Olympic. June 5, 1890, the Hesperian Society was admitted; October 1, 1895, the Columbian Literary Society; November 22, 1898, the Feronian Society.

"The year 1900 was characterized by quite important changes in the association. An entirely new constitution was adopted January 17, 1900, at which time the Phi Delta Society was taken into the association, making seven societies in all. Also, the records were thoroughly looked up and several errors corrected. The first contest was not recorded, and the exact date of organization could not be found. The contest of October 29, 1892, was left out of the record books; but a full account was found in the Speculum of that date. With these two contests counted in, it will be seen that thirteen contests have been held. This will make the one held February 23, 1900, the thirteenth instead of the eleventh as printed on the programs this year." This organization is still in thriving existence.

The Dante Club organized in 1894, was short-lived. Meetings were held every Wednesday evening at the office of the Assistant Professor, A. B. Noble, College Hall.

The M. A. C. Grange. For some years officers of the State Grange and certain members of the faculty considered the matter of establishing a grange at the Agricultural College. The M. A. C. grange of the Patrons of Husbandry, was organized March 29, 1895. For a time it met with moderate success, finding two prominent difficulties which were the means of causing the abandonment of the grange. (1.) Nearly all the best students already belonged to some one of the literary societies which was uppermost in their plans. (2.) Some of the officers of the grange must be women or girls, and "the powers that be" at that time were unwilling to establish a society open to both sexes.

The Chorus is an organization meeting once a week and holding a concert each year known as the "May Festival."

The New York Club was formally organized in February 24, 1909; the members are students of both sexes from the state of New York, including all teachers from that state.

LIBERAL ARTS UNION.

It is the purpose of this union to encourage and stimulate a greater interest in those matters that make a broader social and cultural life in the College, and to this end it encourages and supports all organizations that tend to bring about such conditions. There seems to be need of some organization

to stand responsible for May Festivals and various other entertainments; hence this organization early in 1909.

The Dramatic Club, (Men and Women) was organized in the spring of 1910; the name is an indication of the purpose of its members.

SCIENTIFIC AND KINDRED SOCIETIES.

The Natural History Society.

On May 17, 1872, such an organization was formed by the students, aided by the members of the College faculty. Although it is called a Natural History Society, its objects have always been broader than this name would indicate, and include chemistry, mechanics, engineering and astronomy; even a little pure mathematics has occasionally been tolerated.

The members worked by sections, where they were placed by the president who gave each a choice where it was practicable. The chairman of each section was usually a member of the faculty, and helped start the members of his section in some appropriate investigation. The sections were botany, zoology, geology, chemistry and scientific methods. The communications were presented to the sections meeting as one body.

This old society had a feeble existence after the Botanical Club and Zoological Club had been formed in 1886. It is difficult to fix the exact date of its disappearance, perhaps in 1904.

In one of his reports President Abbot wrote:

"The Natural History Society has been a valuable auxiliary to the educational work of the College. It has held monthly meetings, in which the members, students, and officers give account of their observations of natural phenomena, the habits of animal and plants, and their experiments. The society has awakened a zeal for investigation in many of the students; and the reports of its papers and discussions in the two newspapers of Lansing have been profitable and interesting to many who could not be present at all the meetings."

In April, 1884, a Chemical Club was organized composed of seniors and juniors meeting in sections two afternoons of each week, making apparatus and preparing some unusual experiments. It was short lived.

The Engineering Society was organized as a Mechanical Club in April 2, 1886 (for men). Two preliminary meetings had been held, and the first regular meeting was held Friday evening, April 2nd. All students taking the mechanical course can become members by signing the constitution. Others not in the mechanical course can be elected, providing three negative votes are not cast against them. The officers at first were Prof. McLouth, President; Mr. J. Wiseman, Vice President, and Mr. L. C. Bartmess, Secretary and Treasurer.

On June, 1886, a Zoological Club was organized, which met every two weeks. It started with 18 active members, the majority of whom were juniors.

August, 1886, a number of the sophomores formed a Botanical Field Club; in September 26, 1890 it was called the M. A. C. Botanical Club and met a short time on every Wednesday when the members reported on observations made, or under the guidance of Dr. Beal visited various parts of the grounds, to examine the trees and shrubs, the arboretum, botanic garden, museum. The club became dormant in 1910.

The Farmers' Club, was organized in December 6, 1899 under the auspices

of the State Association of Farmers' Clubs; meetings are held on a fixed evening each week.

The Horticultural Club was organized on November 5, 1901 with T. G. O. Phillips, President; S. B. Hartman, Secretary. Meetings are held on every alternate Wednesday evening, after which it is customary to pass around fruit of some kind. Toward the end of the spring term, an annual fruit banquet is held, with fruit from many sources even California and Florida. Its members take part in two contests for prizes offered by the State Horticultural Society.

The Research Club. This began in a very informal way in the fall of 1902 and held meetings at irregular times; the leading spirits at first were Dr. Marshall, Professor Pettit and Floyd Robison, with additions from time to time.

The M. A. C. Foresters organized in the fall of 1903, holding meetings every alternate week; in 1907 the name was changed to M. A. C. Forestry Club.

The Dairy Club was organized October 12, 1907 with W. B. Liverance, President; J. R. Dice, Secretary.

The Rifle Club was organized in the winter of '09 and revived in the fall of 1910; managed by the Military Department.

The Society for the Promotion of Agricultural Education. This society came into existence on Saturday, January 22, 1910, through the efforts of some of the teachers of agriculture in the high schools of the state who were in consultation at the College. The officers elected were: R. G. Carr, '09, President; R. G. Hoppingarner, '09, Vice-President; C. L. Nash, '09, Secretary; B. H. Roberts, '09, Treasurer; Professor W. H. French, Corresponding Secretary. At present there is no uniform course maintained in the high schools. One of the principal aims of this meeting was to make a uniform program. The discussions were purely technical, and dealt with the everyday problem of the teacher.

The Poultry Club was organized in the fall of 1910, its members superintend poultry shows held in connection with the poultry institute in February.

The M. A. C. Veterinary Medical Association was organized in 1910.

The Journal Club is an organization of the teaching force of the Botanical department whose aim is the study and discussion of various topics pertaining to plant life. It meets every two weeks at the home of Dr. Bessey. It began in the autumn of 1910, and is now called the Botanical Seminar.

GREEK LETTER SOCIETIES.

The Iota Chapter of The Delta Tau Delta Fraternity (for men) was established in 1872, and discontinued in 1891, owing to poor choice of new members. Their room for meetings, usually on Friday evenings, was after a time, on the fourth floor west end of Williams Hall, but this was later assigned to the Columbian Society.

The Beta Chapter of the Phi Delta Theta Fraternity (for men) was established November 8, 1873, for a time meeting in the class room of Dr. Beal, third floor south-east corner of College Hall, finally in later years, meeting Friday evenings in the lower room east end, of old Wells Hall. It was discontinued in March, 1898, owing to the judgment of the grand chapter that no chapter should be connected with a college not giving a classical education.

Tau Beta Pi Fraternity is an honorary society for engineering students

of the highest grade. A chapter was established in 1892, and now has rooms on the third floor of the Engineering (Mechanical) Building, where meetings are held on alternate Thursday evenings during the college year.

The initiations of the members of this society are to some extent open to the public, as the students dress in grotesque costumes and engage during a good portion of a day in performing various stunts about the campus.

The Alpha Zeta Fraternity is an honorary society for Agricultural students of the highest standing, limited to students of the upper classes. To some extent initiations are open to the public. For a time meetings were held in rooms of the State Board of Agriculture; later, in the horticultural laboratories; now, in comfortable quarters in the new Agricultural Building. The Kedzie Chapter was established December 13, 1902.

The Omicron Nu, an honorary society for women was organized at M. A. C. in 1912, consisting of the majority of the faculty of the Division of Home



Public School, East Lansing.

Economics and open to juniors and seniors of high scholarship. A chapter has since been established at State Normal College, Albany, N. Y., at Iowa State College, Ames, Iowa and at Purdue University, Lafayette, Indiana. A number of applications for chapters elsewhere are now under consideration.

RELIGIOUS ORGANIZATIONS.

From the opening of the College, there were religious exercises.

The College Christian Union was organized in 1871 and gave place in 1881 to the Young Men's Christian Association.

The Young Men's Christian Association was established in 1881 and held two meetings a week, following the college Christian Union in use of a room on the third floor of College Hall. Much the same kind of work was carried on as that of the Christian Union. In 1889 the association moved from this room to the north-west corner of Williams Hall, first floor.

The following is from the Junior Annual of the class of 1912:

"The opportunities and duties of the association have multiplied tenfold since its birth. The College has grown so rapidly within the last few years that it was found that the organization could not make its influence felt to the greatest advantage solely through student management. A general secretary was therefore secured and devoted his time to the interests of the organization.

"The association tries to promote Christian principles in various ways, by holding regular evening meetings on Sunday and Thursdays to give opportunities for religious worship, to form Bible classes to study the work of missions.

"The main object of the Young Men's Christian Association is to promote Christian fellowship. It is by no means an exclusive organization, but aims to reach and aid every student in every way within its power. It is



People's Church, North of M. A. C.

an organization of students for students. The association has high aims and ideals and is worthy of the support of every man in college."

The Y. M. C. A. Cabinet consists of select members of the Y. M. C. A. who act in the capacity of advisors or an executive committee. This society is of recent origin.

The Order of King's Daughters. The Try and Trust Circle largely through the efforts of Mrs. Ella Bass Weil was started with five charter members, October 8, 1895, usually meeting every alternate Wednesday. Its purposes are to develop spiritual life and to stimulate Christian activities. The members are mostly women of families of the faculty of the College.

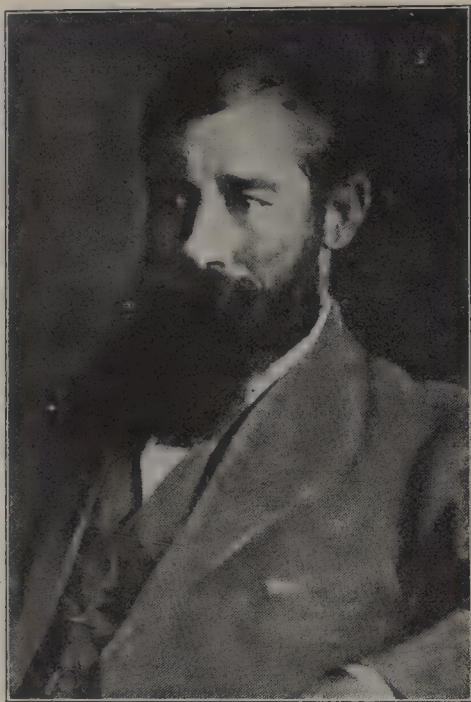
The Young Women's Christian Association was organized on September 26, 1896, soon after the course in Home Economics was installed. Meetings were for a time held in the parlors of Abbot Hall; later in the recitation room of the Woman's Building. Among the activities are prayer meetings, Bible classes, union meetings with the Y. M. C. A., sending of delegates to

state and local conventions and to a summer school at Lake Geneva or elsewhere.

The Peoples' Church. (Congregational)

On each Sunday during the attendance of students, a public meeting for worship has been held ever since the opening of the College in 1857. Some time in 1906, perhaps sooner, the subject of establishing a church in East Lansing was considered. Accordingly a church was organized and for a time services independent from those of the college were conducted in the chapel.

The chief promoters were college people. The corner stone for a church building was laid on Sunday, October 23, 1909 on a lot situated north of the



A. J. COOK.
Portrait 1913.

College and a little east of the township line, near two stores. The building is largely made of brick and cement and has four massive pillars in front, with a dome in place of a steeple.

The church was dedicated during the week beginning on October 22, 1910 and the members start off with modern ideas that rooms may be occupied daily for purposes social, charitable, religious or civic.

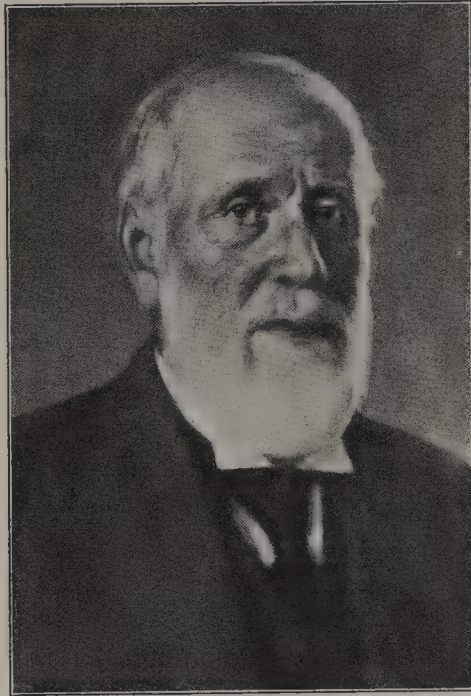
THE ALUMNI ASSOCIATION.

The meetings are intended not only for alumni, but for all who have been students of the college.

The first meeting called for a reunion was in November 11, 1868, at the time of commencement. Besides the class graduating, there were nine present, A. J. Cook, W. W. Tracy, C. E. Hollister, G. W. Harrison, S. F.

Sleeper, D. A. Harrison, L. A. Hurlbut, F. S. Burton, G. F. Beasley, and perhaps others. The first public meeting with exercises was held in 1869 in the north room, second floor of College Hall. There were about twenty present besides the graduating class. Another meeting was held in 1870 at the time of commencement, and at that meeting, it was decided to meet triannually, a plan which has been regularly adhered to, except that we passed a period of four years previous to meeting at the semicentennial.

At the meeting in 1873, the date was changed from the time of commencement in November to August, at the time of junior exhibition. Later, commencement came in August, and meetings of alumni also. These, then, are the years for meetings of the alumni, 1868, 1869, 1870, 1873, 1876, 1879,



DR. W. J. BEAL.

Portrait 1913.

1882, 1885, 1888, 1891, 1894, 1897, 1900, 1903, 1907, 1910, 1913. For portions of the above, I am indebted to Professor A. G. Gulley, '68.

At the meeting held June, '13, it was voted to drop the name "Alumni" and make the society broader in its nature to include all students who had attended M. A. C. one year.

A history of the Association appears in the Harrow, by the juniors of 1890.

Local associations of alumni have been established in Washington, Chicago, Detroit, Grand Rapids, Jackson, Ionia, Columbus in Ohio, New England and Portland, Oregon. The Northwestern Association at Minneapolis meets at the time of the State Teachers' Association. Gatherings of M. A. C. men have occasionally met in connection with meetings of the Association of Agricultural Colleges and Experiment Stations, as at Baton Rouge and Washington.

The Alumni pin is oval in shape, bearing on its face the college monogram, also the words, "Alumnus" and "Founded in 1857." All seniors and alumni are entitled to wear this emblem, and it is hoped that all will show loyalty to their alma mater by so doing.

An Advisory Council of Alumni.

As a result of the recent action of the Alumni Association in accepting an invitation of long standing from the State Board of Agriculture a committee of six representative members of the Alumni were in 1907 appointed whose duty it is to meet with the State Board at least once a year for the purpose of mutual conference in matters pertaining to the work and welfare of the College.

Those selected were: Chairman, Ray Stannard Baker, '89, of East Lansing; William K. Prudden, '79, of Lansing; L. Whitney Watkins, '93, of Manchester; Prof. Eugene Davenport, '78, of Urbana, Ill.; George J. Jenks, '89, of Sand Beach; E. N. Pagleson, '89, of Detroit.

These members met, some of them more than once, made a report, a copy of which was sent each member of the Board of Agriculture. I have not learned that any portion of the report was made public.

The succeeding committee met Dec. 6, 1910 at the Hotel Downey, and consisted of A. B. Cook, '93, Chairman; W. K. Prudden, '78; G. J. Jenks, '89; L. W. Watkins, '93; Gerrit Masselink, '95, and J. R. McCall, '91.

CO-OPERATIVE BOOK-BUYING ASSOCIATION.

Largely through the efforts of Professor W. O. Hedrick this association was organized in December, 1896. For some years previous the subject had often been discussed. The association was formed by faculty and the students for the purpose of buying text books, stationery, etc., at reduced rates. From the start care has been taken to keep down losses by limiting the hours when purchases can be made. The store has been successful from the start, not only in saving a nice per cent on the goods, but in saving the time and expense of going to Lansing for them.

In November, 1906, a report shows the merchandise sold amounted to \$14,377. The report at the end of the college year in June, 1911 showed that the sales amounted to \$25,000, with a saving to students of about \$5,000. There was at that time dead stock on hand costing not over one hundred dollars. Usually the expenses of conducting the store are about seven per cent. The trade is now about \$60,000 a year.

THE BOARDING HALLS.

In the early history of the College a boarding hall was absolutely necessary for feeding the students and unmarried employes of the College. A steward was appointed by the governing board, who had charge of the domestic management of the College, hired the female help, purchased the supplies, and presided at the tables in the dining hall. He received a regular salary, which was counted as part of the regular expenses of the boarding system, and for many years he had the exclusive use of a horse and wagon to bring supplies from Lansing. The total expenses of the boarding system for each term were divided up among those who enjoyed the creature comforts for the season. Friction between the students and steward was frequent, and grumbling was normal. After a change of stewards a teamster employed on the garden complained that while under the former steward he "had

enjoyed all the luxuries of the season, under this man the board was no better than on ordinary farms." Some students wanted good board regardless of cost, while others wanted cheap board—"plain living and high thinking."

"After the old boarding hall burned in 1876," the *Speculum* reports, "the College authorities were ready for a change, and the students were anxious to try their hand at housekeeping. Professor R. C. Carpenter spent a winter in Ann Arbor and saw the working of the club-boarding system for students where every student could find the club that suited him both as to cost and quality. Professor Carpenter presented so bright a picture of the advantages of the club-boarding system—better food and at less cost, and no need of worry and anxiety of the College authorities—that the plan was adopted. Assisted by H. W. Collingwood and with the advice of a committee of the faculty, Professor Carpenter engineered this new departure in social life at the College. Perhaps no single change in management ever did more to remove constant friction in college life or contributed more to the comfort of all than the inaugurating of the club-boarding system at the College."

In 1906 four boarding Clubs A, B, E, G, became incorporated for business. They hired a purchasing agent who also buys for Club D, and for the girls in the Womans Building known as Club C. Each of the incorporated clubs elects a director; Secretary A. M. Brown is treasurer. A student in each club keeps accounts of the boarders and collects the bills for board. Experience in the past tends to improvements. The plan in 1913 works satisfactorily.

"Each club has one cook and several helpers. In the boys' clubs waiters are selected from among the students and receive their board as compensation. One waiter waits upon 25 to 40 persons. Opportunity for students to work for their board is seldom ever open to first year men, as the older ones have always spoken for a place ahead. With the girls it is all different. The girls take turns in waiting on table and receive instructions as a part of their education."

The College Band.

From the Junior Annual for 1912.

"The College band is strictly of a military nature, being a part of the College cadet regiment and directly under the supervision of the military department. It is organized along the same lines as the regular army bands.

"The military duties of the band are much the same as those of the other companies. During the fall and winter terms the rehearsals must be held three times a week at the regular drill hour, and during the spring term the band turns out on the drill ground to lead the regimental parades.

"In addition to the military work, however, the band is active in many phases of college life. A college celebration, athletic event, mass meeting, or even social function, is now incomplete without the band; and in co-operation with the rooters, it is instrumental in stirring up real live college spirit. As a concert organization, it has gained an enviable reputation within the last few years and ranks as one of the best college bands in the country. Professor Arthur J. Clark has directed the band for the past six years, (1913) and during that time the organization has steadily and rapidly progressed, until now the best standard compositions, as well as the lighter popular selections, appear upon its programs."

A College Band has existed ever since the appointment of the first pro-

fessor of military tactics in 1884, gradually becoming better as the students increased in numbers and the leader became more proficient. The best of all of them is Professor A. J. Clark in 1913 with a force of fifty-one men.

The band has given sacred concerts in the Armory Sunday afternoons. With the help of Professor E. S. King, they have made a tour of the state during the Christmas recess, giving concerts which have been well received. They have accompanied the football teams to games in Ann Arbor, Columbus, Madison and other places.

Student Council or Union.

On March 24, 1908, The M. A. C. Record reports:

"Perhaps the largest mass meeting held at M. A. C. in a number of years was that in the chapel Friday night for the purpose of organizing a student union and adopting a code of rules which will be the criterion for the future guidance of all classes, and settlement of matters which concern the student body. The majority of the rules recommended by the committee from the upper classes consisting of Messrs. Barden, O'Gara, Grazer, Boyd, Lemmon and DeCamp were adopted as follows:

"1. That for the future settlement of all class matters and the maintenance of the college customs and traditions at M. A. C. a students' union be formed, to consist of three seniors, two juniors and one sophomore to be elected by the classes named in the first week of each fall term; the officers to be a senior president and a junior secretary.

"2. Each and every freshman and sub-freshman shall wear at all times during the fall and spring terms, except on Sundays, a cap of the following description. For the freshmen, an official brown cap with a small vizor and a gray button. For sub-freshmen, a similar gray cap with a black button. They shall not at any time while in college wear a pin representing their preparatory school in any manner, nor shall they wear any emblem or insignia of that institution.

"3. No student shall be allowed to loaf around the college barber shop.

"4. All students shall show their respect to college professors whom they know by tipping their hats.

"5. Only seniors may wear stiff hats about the campus.

"6. A time-honored tradition at M. A. C. is that no student shall smoke on the campus.

"7. Students' night shall be the last Thursday night of the spring term when a celebration in the form of a night shirt parade shall be held under the supervision of the junior class. On this night, at which time the freshmen and sub-freshmen caps may be burned, all classes participate in this celebration.

"8. Commencement week shall be known as senior week.

"9. Class numerals can be worn only by members of its football, base ball, basket ball or track team or by members who have earned a position on the first or second varsity teams and then only when those numerals have been awarded by the Athletic Council upon recommendation of the class.

"10. The most important social function of the college course is the Junior Hop given by the class during the winter term of its junior year.

"11. There is no hazing. Occasionally some individual first year man is made to feel that one can know too much from the start, but hazing is severely condemned as a general practice.

"12. The old class rushes have been abolished and the organized rush on the second Saturday of the fall term substituted."

At a meeting of the Student Council held on Friday, June 12, 1908, the business of the year was finished and recommendations drawn up for the use of the succeeding council:

"While the council has accomplished no startling results, the work of the term has been a signal success. We look forward with confidence to the time when this organization can be made an effective instrument in the hands of the student body.

"With regard to the present regulations and customs we may say that the spirit in which they have been received and carried out is highly satisfactory. The idea of a college periodical edited and managed by students, was also taken up.

"As promiscuous advertising is unsightly the council recommends the placing of large billboards in conspicuous places. This is being done, and in return we recommend that all advertising by students be confined to these boards.

"To make the observance of 'student night' more formal and impressive, a large banner has been made which is to be handed down with appropriate ceremony from year to year by the outgoing senior class to the keeping of their successors. This ceremony will mark the passing of the senior class from college activities. The burning of the freshman and 'prep' caps will be in charge of those classes." Many other colleges and universities have adopted similar plans to help regulate the conduct of students.

In the Record for November 10, 1908, appears a criticism by the father of a freshman on the rules of the council:

"It seems to me that your class rules are not altogether on American principles. The council has no delegates from the freshman class, yet it lays down rules that the latter must follow. This is taxation (or government) without representation. If the council had four seniors, three juniors, two sophomores, and one freshman, the deal would be a fairer one, and in all probability the freshmen would acquiesce more readily to the rules, under the theory that the minority should be content to submit to the majority, except in cases of clear injustice, when they would have the inherent right to resist. A college in America ought to be a little republic, with fair representation in all matters for all students."

Some of the rules of the student council smack too much of the rules in vogue in Rugby and Oxford, England. It is a wonder that rebellions are not more numerous and more serious.

It is by no means certain that this record of societies is complete. From time to time in season of presidential campaign there were, for a few weeks, usually a Republican Club, a Democratic Club, a Prohibition Club.

As the College becomes larger, there will be still more clubs some of which will endure and some of which will thrive only during the presence of a certain professor, becoming inoperative as soon as he leaves the College.

ATHLETICS.

"In 1857," writes C. J. Monroe "Our sports were mainly of the country sort, 'one' and 'two-old-cat' ball games, 'running, hop-step-and-jump,' 'pom-pom pull away,' 'tag,' and 'leapfrog.' Some of them were not very dignified; still there were no smashed noses, cracked heads, maimed limbs, nor any killing."

In April, 1882, The Speculum contains the following:

"Why can we not form a college athletic association? The matter has

been discussed for some time. Why should we be behind other colleges in this respect? At present our sports are confined to an occasional 'scrub' game of base ball, or to a miscellaneous kicking at the football. Why cannot the energy displayed in these games be organized and improved?"

Previous to 1910, the following students had each had a leg or foot broken playing baseball or football: C. I. Goodwin, '77; D. J. Stryker, '85; E. E. Vance, '84; J. C. Stafford, '88; C. B. Collingwood, '84. How many heads, noses and collarbones were hit hard, how many fingers and thumbs knocked out of shape, we have no record.

On May, 1895, Hon. Charles W. Garfield in speaking of athletics said: "College athletics is a germ disease, and we must inoculate it with something that will develop a mild type of the same thing and not so fatal."

From a youth at the College, often playing one-old cat in an improvised game, Professor F. S. Kedzie has kept note of the progress of games on the campus. He observes:

"The home plate has travelled a good deal, being located back in the seventies just north of Williams, then east to where the library stands, then north to Howard Terrace, thence westward to the drill ground—thence to the field on the flats across the river."

As students increased in number, the parade ground west of the armory became too small for "the sports" and the assembled "rooters;" besides it interfered with the military drill of students. Sometime in 1900, a field of thirteen acres on the flats south of the river below the president's house was purchased, where the grand stand and bleachers have been erected and other improvements made. Sometimes a freshet interferes with the games; but otherwise the ground is very fine. To get to the field from the campus, a good road and substantial bridge have been constructed.

ATHLETIC ASSOCIATION.

On October, 1886, the management of athletics was entirely changed. An organization was effected governed by a set of rules and Professor R. C. Carpenter was chosen manager.

This is a students' association, which with the advice of the faculty and its committee, has control of all college athletics, consisting of base ball, football, basket ball, tennis, track events, wrestling, cross-country runs, indoor events, field days, distribution of decorated sweaters, invention of yells, the adoption and coining of sporting words and phrases.

The following is found in the Junior Annual, class of 1901:

"Athletics have been carried on to a limited extent here, since the College was established; but not until '82 were they recognized to be of sufficient importance to demand attention. In the spring of this year the subject of athletic contests was discussed; but the first local field day was not held until June, '84, the only recorded events being wrestling, throwing 35-pound weight, running jump, 100 yard dash, high kick, broad jump, and a contest called tug of war. Base ball was the leading attraction at that time, it being carried on from early spring until late in the fall. Local field days were held at such times as were convenient, until '86 when the three colleges, Olivet, Albion and M. A. C. united and held contests together, the first one being at M. A. C., May 14, and 15, 1886.

"A little later, Hillsdale applied for admission to the contests. This led to another difficulty, which was, too many field days a year; for it had been the custom to have a field day at each place each year. The idea was

then suggested of having but one annual inter-collegiate contest. As a result representatives from these four colleges met at Albion, March 24, 1888, drew up the constitution and organized what was for a time the Michigan Inter-Collegiate Athletic Association.

"The first annual field day of the M. I. A. A. was held at M. A. C. May 31, June 1 and 2, 1888. The eve of the 2nd found the success of M. A. C.'s athletic career established; the most successful athlete being Leander Burnett, who won first honors in a number of track events and played on the ball team.

"Ypsilanti was admitted to the association in 1889, and with the admission of Kalamazoo in 1894 and Adrian in 1900 the association in 1901 contained seven colleges.

"Since 1896 M. A. C. has stood far in advance of any other college of the M. I. A. A. in track athletics."

The first person named in the college catalogue as having anything especially to do with the athletics of the young men is Charles O. Bemies, Director of Physical Culture, serving from 1899-1900. Then appears George



Grand stand and a portion of the bleachers.

E. Denman 1901-1902; to be succeeded by Chester L. Brewer 1903-1908, his title changing to Professor of Physical Culture and Director of Athletics 1908-'10. Next appears the name of John D. Macklin 1910— Professor of Physical Culture and Director of Athletics.

Foot Ball.

After a winning game the students spare no pains in demonstration such as a parade in the streets of Lansing, bonfires on the campus, or a banquet at the close of a season, at which details of victories are rehearsed. Witness the notes of one report December 11, 1908.

"Never before did an M. A. C. team go through an entire season without meeting defeat, and seldom has any college team played institutions ranking with Michigan, Wabash and DePau and kept its goal line clear."

"The largest score registered in a single game was 58 on the Reserves, and the largest on a college team was made in the game with the Michigan State School for the Deaf, when M. A. C. scored a total of 51 points.

"With the exception of Frazer's broken fingers not a serious injury was received during the entire season.

"The most noticeable defeat of the season was the woeful lack of student spirit. At times when every person connected with the College should have been down on the bleachers, many of the students could be found at the roller rink or other down town places of amusement.

"The rooting at mass meetings, held for the purpose of getting good fighting spirit into the team, was most indifferent and weak, and did not represent one-half of what could be done if everybody had done his share of the rooting.

"We've got a bunch of good yells and songs and with the whole student body assisting a class of systematic cheering could be established here which should not be surpassed by colleges three and four times our size.

"The banquet will be given in Wells Hall, and covers are to be laid for 250. Coach Brewer will act as toastmaster, and the following toasts will be responded to: H. K. Vedder, 17 years of football; Capt. Shedd, Season and Team 1908; Capt. elect McKenna, Prospects for 1909; C. J. Oviatt, for the Olive Green; Prof. G. W. Bissell, Athletics and Engineering; Prof. F. S. King, Inferences."

THE FIRST COLLEGE YELLS.

The first college yell was invented, formed and adopted in 1889 and the spelling looks like this: "Uzz, Uzz, Uzz, M. A. C." The yells since adopted by different classes and for different occasions are extremely numerous and all cannot now be enumerated. I. B. Bates, '87, was the chief architect of this first product. Here is a choice "bunch" from the Junior Annual of '05:

Rah! Rah! Rah!
Uzz! Uzz! Uzz!
M. A. C.

Rat-ata-thrat! ta-thrat! to-thrat!
Terrors to lick! to lick! to lick!
Kick-a-ba-ba, Kick-a-ba-ba,
M. A. C! M. A. C! RAH! RAH! RAH!

Osky wow wow!
Shinny wow wow!
Skinny wow wow!
Wow! Wow! Wow!

Yah Ha! Yah Ha! Hah Ha! Ha! Ha!
M. A. C! M. A. C! Rah! Rah! Rah!

Who can?
What can?
Can can?
We Rubes can.

Rah! Rah! Rah!
Rah! Rah! Rah!
Rah! Rah! Rah!
Tiger.

Hoop-la-ha to Hoop-le-he!
Walk up! Chalk up! M. A. C.

Still others found in the M. A. C. Record for May 22, 1900.

Je hah! Je hah! Je hah, hah, hah!
M. A. C! M. A. C! Rah, Rah, Rah!

Hully Balloo, baloly, balee!
Hoop la hah! Hoop la he!
Walk up! Chalk up! M. A. C.

Chick a go runk! go runk! go runk!
Hi, yi, rickety, rah de roo!
Depa la rah! Repa la roo!
Ch' bim, ch' boom! ch' bim boom bee!
I yell! I yell! for M. A. C.

With such a bewildering assortment, surely no student need hesitate selecting M. A. C. because the yell isn't well suited to his voice.

With those named above and others not here reported, the association is not yet satisfied. From the *M. A. C. Record* of May 3, 1904, note the following:

"A prize of \$3 will be given for the best yell handed in on or before May 9th, 1904. A second prize of \$2 and a third of \$1 will also be given. The competition is free to all."

In his report for 1908, Director C. L. Brewer speaks of attempting to interest as large a number as possible in wholesome recreation, whether students or faculty or others. The work is seriously curtailed for lack of a gymnasium and no regular time available, however, work with Indian clubs, dumb-bells, bar-bells, free arm and breathing exercises were offered, also exercises in hand-ball, fencing, wrestling, tumbling.

"The third annual interscholastic meet drew to the athletic field twenty-nine high schools of the state."

To learn that the attention to athletics at M. A. C. is on the increase, one has only to read the *Wolverine* of the Juniors of 1912. We are led to infer that there is nothing like it; nothing in college is of so much importance. The teacher of athletics—Brewer—was lauded beyond any other man ever connected with the College.

"A history of athletics at M. A. C. in the past ten years may be said to be a history of Brewer; and may be roughly divided into two periods—before Brewer and while Brewer was here.

"As to the period before Brewer, little need be said. A glance at the football scores for the year 1902 will suffice as an example.

"In 1904 our baseball team won a championship title by virtue of its victories over the Universities of Wisconsin and Toronto. Our greatest triumph, however, has been in football. For no less than eight successive years we have upheld the record of 'no defeat on the home field.'

"Each year games with stronger and stronger teams have been scheduled, but never (1910) has College field witnessed a defeat in football; even the U. of M. failing to defeat us when they played on the home field in 1909. A total of 1,918 points to our opponents' 234 is the record of football scores under Brewer.

"It was Brewer, the man, who has instilled into players and rooters that 'Never say die' spirit and that fair play which has urged to victory our great teams of the past few years. It was Brewer, the man, who constantly kept before us an ideal of what true athletic spirit is; he has taught us the real meaning of those words, 'a good loser.' Those who heard Brewer speak at mass meetings will remember his words before the 1909 Notre Dame game, when he said, 'Boys, we're going to show them that we have a great team. That team of ours is going in to fight to the last ditch. We may lose; but win or lose, let's show that M. A. C. has the cleanest, finest and most gentlemanly bunch of sportsmen that they have ever played against. Be game—and treat the other fellow right.' And the school followed his

advice, showing the people of South Bend and Notre Dame what real enthusiastic rooting and support is like.

"We have much to thank Brewer for, but by far the most important thing is that spirit—the spirit that puts every man behind his team, makes every man cheer, while his voice lasts, for the team and school, no matter if they are defeated, and makes every one remember that, win or lose, M. A. C. is game to the core."

Professor Brewer inaugurated the plan of having some of the high schools of the state hold in May each year, an interscholastic track and field meet. He also induced some societies at M. A. C. to contest for a silver cup, the winning society to hold the cup one year; the society winning any three years to have permanent possession. The Hesperians won permanent possession in 1913.

The circumstances under which Professor Macklin, or Coach as he prefers it, came to M. A. C. could have been more favorable. There was a vague feeling that the man did not exist who could fill Brewer's place, either as a coach or as a personal friend. It was rumored that eastern coaches were brutes, merciless drivers of men, without feeling and without sentiment. Macklin was received warmly enough, but there was a subtle sense of judgment reserved, waiting to witness results.

Mr. Macklin proceeded at once to obtain results. No cruel system of driving appeared; he failed to play the brute; he studied the individual and acted accordingly. Without ostentation or display he took up Brewer's work where Brewer left off. There has been no halt, no slipping backward. Under his direction M. A. C. has steadily risen in the western athletic world, until she is just ready to take a place with the best.

Brewer laid the foundation and laid it well. His memory will always remain fresh in the minds and hearts of those who knew him. But to John Farrell Macklin must be given credit, not only for keeping the Green and White prominently on the athletic map, but for advancing its position to the very forefront. The judgment that was reserved is now given freely.

With some help of assistant coaches, Macklin's chief duties are to train a few students in the autumn for football; a few more for basketball in winter and a generous number for baseball in the spring; to encourage practice of others in various games including track events and not least, to stimulate by all honorable means, as many rooters as possible.

Who dare say that athletics is not already getting away with courses of study beyond its merits?

Observing the popularity of Professor Brewer above all others, I am reminded of a statement concerning Ralph W. Emerson when he was one of the trustees of Harvard University. He was troubled, a little, in noticing that Agassiz was making a good deal of stir with natural history and he wondered whether he ought not in some way to be curtailed. He was silenced by Agassiz's rejoinder, "You ought not to check my efforts in zoology, but strive to make the work of all others better." The cases however are not parallel.

ADVANTAGES OF ATHLETICS IN COLLEGE.

They give opportunity for many students to work off surplus steam out doors and in assemblies instead of in dormitories and at unseasonable hours.

They stimulate a small portion of students to practice, often with the hope of getting into a team.

They increase considerably the opportunities for a student to win some victory to mention in the Junior Annual or to talk about among his friends.

Since there are so many elective studies, and the number of students has increased so largely, the "class spirit" in most colleges is declining.

Athletics, if skillfully managed, may become a strong force for a clean moral life. President E. F. Nichols of Dartmouth in 1909, said "Inter-collegiate sports do more to unite the whole college and give it a sense of solidarity than any other undergraduate activity, and thus serve a worthy purpose."

Aristocracy cuts no figure in athletics—can a man play well? If so, he will be welcomed to the team whether Indian, Negro, Italian or Japanese.

If it is right to give awards to the man winning in a game, it certainly is right to give awards for a hundred other things that can be named. Here are a few: the best work in each and every term of each class in college, whether text book or laboratory; debates, orations, disquisitions, dissertations, stories; best drawing, lettering, best slide in plant anatomy, or zoology, plans for planting about a dwelling, or a home farm, taking up and laying sods, proper use of a scythe, or seeder, shearing sheep, plowing, marking out ground for rows.

So far as athletics serves to advertise for more students, it attracts those inclined to sports rather than those who go to college for mental profit.

OBJECTION TO ATHLETICS AS USUALLY CONDUCTED IN COLLEGE.

The trainer selects one-twentieth to one-fortieth part of the students for his teams, paying little or no attention to the other nineteen-twentieths—thirty-nine-fortieths, except to induce them to pay fees and come out to the games as rooters, and show "college spirit."

Especial training is given to those who scarcely need it, as such men would practice enough of their own accord.

The time given to practice at the college and with other colleges is much in excess of the needs of good students.

A large majority of members of the teams while in training drop in rank unless they take less than a full quota of studies.

Undue attention is given to the importance of winning games, for this enhances the reputation of the trainer.

The exercise is too violent, not infrequently dangerous, especially in football, foot races and rowing.

Athletes are unduly stimulated by their associates and the newspapers to overestimate their enormous importance.

Awards by way of conspicuous articles of dress, badges, etc., are given to winners, while nothing of the sort at M. A. C. is awarded worthy students for successful effort.

Strenuous efforts are often made to win games by unfair means—by cheating if necessary to win.

The enthusiasm of the crowd encourages students to bet on the results.

Success in sports advertises the college by drawing an increasing per cent of athletes, instead of brainy young persons for success in the class room and laboratory.

A small young college is likely to permit athletics to gain momentum with increasing attendance and become more excessive in this direction.

The following is from Luther H. Gulick, in the *Outlook*: July 15, 1911:

"To summarize: It is, then, fallacious to attempt to advocate inter-

collegiate athletics on the basis of benefit to the individual, because less than ten per cent of the students are directly affected; these ten per cent are the ones who least need this activity; the amount of time and effort demanded for these sports is in excess of what the individual should give; as well as because no evidence has as yet been presented which shows that these particular men have been benefited in health, strength, and vitality because of having taken part in these athletic sports.

"These objections and difficulties that have been presented are genuine and real. They are being recognized by many of our most thoughtful and able observers in America, men who are intimately connected with our large institutions of learning, and who are in a position to see the effects upon the individual athletes. On the ground of benefit to the individual, there can be no defense of these athletics."

Arlo Bates, a professor in the Massachusetts Institute of Technology in the Forum for May, 1901, says:

"It is the general experience at the Institute of Technology that a boy's work suffers if he goes deeply into athletics. A student in a technical school of high grade, in order to attain to success, must not only attend to his studies, but give to them the very first place in his interest.

"This unfortunate condition of things is more firmly established by the class of students attracted to college by the fame of athletic victories. In so far as a college is not responsible for such students, it suffers a misfortune in their coming.

"I cannot refrain from closing with the deliberate expression of the conviction that athletics in education today the most serious obstacle to the advancement of intellectual growth."

Dr. James Chapman, President of the Southlands Training College of London, is quoted in the Michigan Alumnus for April, 1913, as saying to some of the Professors at the University at the close of his questions on athletics:

"I have no patience with your American athletics. You are all wrong. You are debasing the bodies and morals of your students by training a few for these great gladiatorial shows, while the great mass of students simply look on and applaud. In England the aim is to develop every boy into full possession of all his physical power, and not to overtrain a few for the entertainment and amusement of crowds. Public opinion in England forces every boy in our schools to engage in some form of healthful sport or to receive the humiliating appellation of 'dub.'"

The editor of the Alumnus adds:

"This is severe but true. There is some comfort in the fact that we are coming to know it."

October 12, 1912, Dr. T. C. Blaisdell, President of Alma College, said: "Today athletics, social affairs and other outside interests receive too much attention."

The Editor of the Holcad for January 14th, 1913, says: "Life has lots more in it than Bijous and parties and J Hops. There are many things worth while, though they may not be 'stunning.'"

The reader will excuse these lengthy remarks concerning athletics. Let us hear from Professor Macklin:

"Excellence in outdoor sports has been attained through the ability to make the most of the facilities provided, which are good; but in indoor work, the lack of a gymnasium has for some time, proved a decided handicap. It would be a great improvement could M. A. C. be provided with a

means by which every student could be given systematic physical training. At the present time, everybody in the institution has the opportunity to take advantage of the work which the Athletic department is doing. Naturally it is a difficult matter to handle the situation where a youth comes to us undeveloped. The boy who shows the slightest inclination receives as much help as the department can give, in the way of advice; but it is a hard matter to make the work interesting in a building such as our present Armory.

"I understand perfectly the various phases of athletics in the life of a college man, and as a result, I wish to explain the ideas that occur to me, aside from the curriculum of any college.

"Men in athletics too often get the idea that when they have a share in the winning of an important contest they may have and may do anything they wish to do. Public opinion may be lenient with the victorious athlete, but the inward satisfaction which comes from self-control, which comes from being a man from start to finish, whatever else may happen, is of far greater value than any public leniency.

"The college team, or college crowd which can carry with it through victory or defeat the true sporting spirit of give and take, fair play under all circumstances and courteous treatment of visitors, is the one admired the world over and the one most likely to play a hard game and show real college spirit.

"Yet, victory is often harder to carry than defeat. You may win universal respect by the way you win a game, only to lose this respect by the way you conduct yourself afterward.

"A man may be a good athlete, and still be a perfect gentleman, a splendid scholar and a sincere Christian—and he ought to be. Such men are in demand in college and out.

"At M. A. C. we do our utmost in athletics, to develop strength of character, to make a real man out of each and every individual with whom we come in contact."

Dr. Henry S. Pritchett, President of the Carnegie Foundation, who has studied most of the nine hundred colleges in the United States, in his address at the Commencement of Bryn Mawr College, June, 1914, named the leading thing which he believed hindered the progress of the College, two of which are:

"The President and the Board are swayed by the all-absorbing lust for numbers.

"The most injurious of these hindrances are intercollegiate athletics whose overshadowing importance has affected not only the intellectual life but the moral and social life as well."

CHAPTER XIV.

THE INFLUENCE OF THE GRANGE.

We have seen that from its origin in 1849 the executive committee of the State Agricultural Society took a leading part in establishing the Michigan Agricultural College, and all along through its darkest days from 1857 to the semi-centennial and ever since that event, these men and their successors have never faltered in their interest and active support. Their numbers were small, their meetings were infrequent.

Of all organizations that have existed since 1875, none have given the encouragement and support that have come from the State Grange. J. J. Woodman, master of the State Grange in 1876 stated:

"Michigan led the van in establishing a college for the higher education of farmers' sons. This was a new departure, a step in advance of the age, and like this organization, met with opposition, laughter, and derision.

* * * * * For years it was opposed by some of the best educators of the state, who lent their influence to destroy it. Yet in spite of opposition and unfriendly legislation, it struggled on, and farmers' boys felled the trees, split the rails, laid the fence, dug the ditches, ploughed the soil, and at the same time prosecuted their studies, and graduated with honors.

"Identified as this institution is with the interests of education and agriculture, I cannot refrain from again calling your attention to the importance of using all laudable means through the influence of our organization to popularize the college with the farmers of the state, and make it a school where not only our sons, but our daughters, can obtain a thorough and practical education of a high order, and at a reasonable expense. That the failure of the legislature to make the necessary appropriations for paying the professors reasonable salaries, and providing further and better accommodations for young ladies, has resulted in serious injury to the best interests and very existence of the College.

"The subject of education was fully and ably discussed in the National Grange, and agricultural colleges, experimental farms, schools of technology, and agricultural chemistry endorsed, and a liberal public policy recommended towards them. It was also the sense of the National Grange that the rudiments of practical agriculture be introduced and taught in the public schools; all of which I fully endorse and submit for your consideration."

Who was Jonathan J. Woodman? For twelve years he was a member of the legislature, and for six years Speaker of the House. Here he did yeoman service for the College, in selecting committees in urging liberal appropriations. He soon became Master of the National Grange, where he was a leader in encouraging the support of agricultural colleges throughout the United States.

As master of the State Grange in 1880, C. G. Luce said:

"I cannot close this reference to the College without calling your attention to the fact that while ample provisions are made by the state for the accommodation of ladies at our state university, yet they are practically

excluded from the College for want of suitable accommodations. Our sons and daughters are reared and educated together in the family, the common school, the high school, university, and denominational institutions everywhere, and can anyone give a valid reason why provisions should not be made for farmers' daughters at the College, as well as for their sons? This question demands your serious attention."

In 1881, State Master Luce said:

"We must never forget that, in the language of another, 'The crowning glory of all our work as an Order is to educate and elevate the American farmer.' This is our right, nay more, it is our imperative duty. Upon the proper discharge of this duty our future as an order depends. Whatever else we may do, our chief reliance is upon this. Education is the corner stone."

Mr. Luce, Master in 1885 said:

"Education is an old subject, very old, yet in some of its features it is always new. Upon it depends our future as an Order, and upon a proper education depends our future as a people. It furnishes the anchor for all of our hopes. We must educate, *educate*, EDUCATE. But the honest critic or inquirer will possibly ask, what has this to do with the Grange? We answer, it has all to do with it. It stands out pre-eminently as the educator of its members. If it fails to do this, it fails in its highest and holiest mission. This is the rock upon which we stand."

Mr. Thomas Mars, Master of the Michigan State Grange in 1892 stated:

"Our organization is a unit in their advocacy of our Agricultural College and its grand work, and woe be unto the legislature that attempts to make it a part of the University, or to take from it one single feature of its usefulness. We will hail with delight and honor any legislature that will make appropriations sufficient to enlarge its usefulness, by providing ample provisions for the admission of the girls on an equal footing with the boys."

Mr. G. B. Horton, Master of the Michigan State Grange in 1893 said:

"Our Agricultural College is the farmers' special school. Its line of studies is calculated for practical application to the business of farming and intelligent agriculture. Every farmer's son who seeks preparation past the common district school should attend the Agricultural College. Farmers should stand by the Agricultural College and see that it is as well provided for as any of the special schools under state control."

In 1896 Mr. Horton as Master of the State Grange said:

"No general annual report to the State Grange would be complete if it did not call the attention of the delegates to the importance of this, the farmers' school. The State Board of Agriculture, from earnest desires and long experience, are striving, as I believe never before, to make this institution meet the true wants of the farmers of the state, in supplying their sons and daughters with practical and helpful education."

In 1899 Master Horton said:

"As we look back over the history of the Grange in Michigan and recall the stand it has taken for many worthy objects, there is no part of that record which adds more honor than its continual support of the Agricultural College. With this the College has been benefited also, for it was the Grange that first gave public announcement to most of the changes and innovations which have kept the College well to the front among others of its kind in the United States."

Throughout his service as Master of the State Grange for sixteen years,

Mr. Horton never forgot to speak and act in behalf of the College. He graduated both of his boys at that institution.

Note the reference of Mr. Horton in 1899 to the fact that the grange first gave public announcement to most of the changes and innovations which have kept the College well to the front.

N. P. Hull, a former student of this College was Master of the State Grange for four years and he said many good words for the institution.

John C. Ketchum was elected Master of the State Grange, December, 1912, and is as loyal as any of his predecessors.

The grange has been more aggressive than members of the Board of Agriculture, even more progressive than some of the presidents of the College.

In 1893, while K. L. Butterfield (in 1907-'11, the able president of the Massachusetts Agricultural College) was editor of the *Grange Visitor*, as chairman of a committee of the State Grange he sent out one hundred thirty-nine letters of inquiry to a select list of persons, including farmers, graduates of the College who were farmers, county commissioners of schools, granges and farmers' clubs.

The replies were too numerous and lengthy to be quoted here. I note a few:

"Many think the course too long, too expensive and not sufficiently practical.

"The reason that so few farmers' sons attend from the south part of the state is that the University and other colleges offer far greater range of courses for practical and scientific preparation for practical work, at less expense, near home, with better social surroundings, lectures, musicales, literary honors, and sanitary conditions."

"The best known feature of recent years was the short term in dairying during the past winter. Its effect upon the general welfare of the College has been most marked. Let this be but a beginning of a system of short winter courses which will accommodate many who cannot take the longer and better full course."

"The great prime cause of indifference is lack of realizing the necessity of such a training as is given at the College in order to get the most good from life. Too many machine farmers. The dollar is too often the standard for measuring the man."

"I think people have lost interest because there has been so much squabbling and changing about. When they get a good man there, they let some other college take him away. I think it might be a good plan to have more of our graduates on the Board. It would be a good plan to publish more about the College and its work. When I was in College ours stood at the head,—now it is behind a number of others."

"I am certain, from my acquaintance in the county, that the University has drawn more farmers' sons in the last few years from this county than has the College. This is largely due to the times. Farming seems unprofitable."

"Although the Grange would not claim to have done all that has been done for these advances, yet if anyone will take pains to look at the records of the State Grange for the last three years, he cannot help feeling that the Grange has been a most potent factor in inducing the College to take these progressive steps."

"We ought to have the teaching of agriculture in our district schools. We cannot do more at this time than to call your attention to the report of your committee made before this Grange in 1894, and reiterated a year ago. We do not care to discuss this matter to any extent here, except to call your

attention especially to one point, and that is that we do not want a text book on agriculture in the district schools. What we want is first the creation among the farmers of sentiment which will demand the teaching of natural science in a plain way,—just simply teaching the pupils to observe the common things around them, and carry this through from the beginning to the end of the pupil's education, taking illustrations directly from farm products and farm surroundings. We could do nothing worse than to introduce a text book on agriculture into our district schools. The next thing we need is for the College to supply a means whereby teachers can be fitted to teach nature studies in the district schools."

K. L. Butterfield continues:

"Among all these efforts to unite the farming classes, by far the most characteristic and the most successful is the Grange.

"It is more nearly a national farmers' organization than any other in existence today.

"To enumerate the achievements of the Grange would be to recall the progress of agriculture during the past third of a century.

"Almost without exception the Granges have praised the colleges, welcomed their work, and urged farmers to educate their sons at these institutions. The Grange has always taught the need of better rural education."

From its foundation the Grange has continued to urge:

"Education is a companion which no misfortune can depress, no chance destroy, no energy alienate, no despotism enslave; an ornament in prosperity and a refuge in adversity."

Another activity of the National Grange served, though more indirectly, in helping greatly the cause of agricultural education. This was its determined fight through many years and in the face of derision to have agriculture represented in the cabinet of the President. This was finally accomplished in 1889 with the formal organization of the Department of Agriculture. As a cabinet officer the suggestions of the Secretary of Agriculture reached the president and other members of the cabinet directly and had great weight in influencing recommendations for appropriations for the College. Since that time the colleges and the department have worked strongly together, one influencing the other and both being encouraged by the Grange, the Farmers' Clubs, and other farmers' organizations.

Think of the extraordinary progress made since 1889 in agricultural education!

Secretary James Wilson at the semi-centennial among other good things said: "A grand work was the laying of the foundation of agricultural education and research to prepare the farmer for his life-work, establish agricultural literature, and lift the tiller of the soil to a higher level of efficiency as a producer and a citizen. No other country on earth has such a comprehensive system to bring about these results.

"The work is telling in many ways. Young people go to these institutions who would not go to any other. There is a great demand at home and abroad for young people educated along these lines. The brightest farm boys and girls are being educated for the farm. It is the most delightful and comprehensive study of material things to which the mind can be applied.

"One of the most praiseworthy lines of work being done at our agricultural colleges is the training of young women in what pertains to themselves and others, including domestic economy, sanitation, nutrition, ventilation, and correct living, resulting in the American girl, unique, unequalled, perfect."

*From the *Experiment Station Record* of April, 1911, I note:

"The growth of the National Department of Agriculture during the past ten years has far exceeded that of all of its preceding history. This was pointed out by Hon. Charles F. Scott, chairman of the House Committee on agriculture, in submitting the new agricultural appropriation bill last winter.

"As a full-fledged department with a cabinet minister at its head, the department dates only from 1889.

"This year, 1910, the department has at its disposal \$15,470,634.16. Ten years ago the total number of persons employed in the department was 3,388; this year, if all the rolls were called, an army of 12,480 men and women would respond.

"Next year, 1911, provision is made for an even greater development. The aggregate amount carried by the act is \$16,900,016. The amount appropriated each state and territory for experiments is included in this sum referred to.

"There is an actual enlargement of the appropriations of every bureau, and a net increase of fully twenty per cent for the department as a whole.

"The largest item included in this appropriation is \$5,533,100 for the forest service.

"This is a large sum, but as was pointed out by Chairman Scott in concluding the presentation of the bill, 'the money appropriated for the Department of Agriculture is an investment and not an expense. And that it has been a good investment the statistics showing the expansion of agriculture and the improvement in methods throughout our country bear eloquent witness.'

"The farmers of America are applying better methods and getting better results from their labors than ever before. And in devising these better methods, in pointing the way for better results, the Department of Agriculture has been the undisputed leader."

In 1912, the Department of Agriculture employed 13,858 persons and an appropriation of nearly \$25,000,000.

Dr. A. C. True of the Office of Experiment Stations, in his report for December, 1912, says: "From these small and uncertain beginnings, there has resulted in the period of fifty years since the Department of Agriculture was formally established an organization for the administration of laws, prosecution of research and the collection and dissemination of knowledge 'The like of which is unknown in any other country or any other time.'"

Dr. H. C. White says: "Economic agriculture has made greater progress in the last ten years than in all the years which went before."

In his address at the celebration of the semi-centennial of Michigan Agricultural College, President Roosevelt used the following words concerning the work of the Department of Agriculture:

"Of all the executive departments there is no other, not even the post-office, which comes into more direct and beneficent contact with the daily life of the people than the Department of Agriculture, and none whose yield of practical benefits is greater in the proportion to the public money expended.

"But great as its services have been in the past, the Department of Agriculture has a still larger field of usefulness ahead. It has been dealing with growing crops. It must hereafter deal also with living men. Hitherto agricultural research, instruction, and agitation have been directed almost

*A publication of the Department of Agriculture made prominent through the action of the Grange.

exclusively toward the production of wealth from the soil. It is time to adopt in addition a new point of view. Hereafter another great task before the National Department of Agriculture and the similar agencies of the various states must be to foster agriculture for its social results, or, in other words to assist in bringing about the best kind of life on the farm for the sake of producing the best kind of men."

President Taft at the State Fair of New York in September, 1911, said: "The promotion of this movement of vocational education of the embryo farmer in the sons of the present farmer is as high a function as any government department could perform, and that is what is being pressed forward under the secretary of agriculture in every state in this nation. The vocational schools must be increased in every state. I am bound to say that I do not know any part of the government business in which the public will receive a more certain advantage than from money expended under the appropriation bills for the agricultural department of the United States."

The writer hopes the reader fully realizes that the efforts of the grange led directly to important legislation in securing a secretary of agriculture and through him reached other secretaries of the cabinet and the president of the United States.

We have seen that President Abbot in 1863 defined the objects of the Michigan Agricultural College as conceived by the founders,—a school of low grade to prepare boys to become better farmers.

With the congressional land-grant the scope was widened to include instruction in the mechanic arts, military tactics, scientific and classical studies. In 1886, the Hatch fund provided for one experiment station in every state to be located preferably in connection with the land-grant college; the Adam's act of 1906 provided additional means for conducting original research bearing directly on agriculture.

And now, 56 years after the founding of the first agricultural college, appears the address of Dr. Davenport* giving a still broader view of these schools.

I consider myself fortunate in being able to quote liberally from his address in 1911 to the graduating class, of Massachusetts Agricultural College, on "The Agricultural College—a Public Service Institution." He tells just what I want to say.

"The agricultural college was established as a teaching institution of about high school grade; it has developed into an organization for research as well as instruction of the highest order. It was opened to teach boys the art of farming, but it has become a bureau of information in agricultural science accessible not only to students, but to men already engaged in the largest enterprises. It was designed, like other colleges of the time, to cater to the individual, but its great aim and purpose has come to be the development of agriculture as a profession and the improvement of the country as a place of residence. It was at first entirely technical; it has become exceedingly humanistic. Its original aim was utilitarian and selfish; its later purpose has been that of the broadest public service. In the beginning it was intended

*Eugene Davenport was a farm boy of Barry County, Michigan, who graduated at the Agricultural College in 1878. He returned to the farm and liked it and was in all respects successful for ten years, when he returned to the College for more study and was soon selected Professor of Agriculture. Not long after he became president of a college in Brazil. In 1895, he was chosen Dean of the Agricultural College in Illinois University, where the regular students in Agriculture could be counted on the fingers of one hand. At the end of 15 years there were nearly 1000 students under his general oversight including a department for women in home economics. Where is the person who dares say that Davenport would have better remained on his farm instead of becoming a missionary in the cause of agriculture in the great state of Illinois?

for farmers only; in its fulfilment it exerts the widest usefulness upon all classes of people. In brief, the agricultural college has developed from a narrow technical school for individuals of a single class into a public service institution of the widest scope and the great magnitude. First of all, it is organized as an experiment station, with funds for research and publication nearly equal to those for instruction. The least of them has \$30,000 of federal funds annually, and there are instances of no less than \$1,000 a day for research alone for every working day of the academic year. With such a system for investigation no item of interest can long escape attention, and no detail, whether of soil or crop or animal, or farm or house or home can evade the searching eye of the investigator or long maintain its secret; and for this great work men are now trained in the finest laboratories of the world. What other human interest is more richly endowed for progress?

"The agricultural college in every state is also a lecture bureau, and its faculty are called upon to address anywhere from 100 to 500 public meetings, depending upon the size of the state and its interest in agriculture.

"In brief, the agricultural college is a center of expert advice. It has become a clearing-house of knowledge not only for all matters touching the lives and fortunes of country people, but for affairs generally affecting all classes of citizens so far as they and their lives are influenced by the present and prospective food supply and by the allurements and conditions of country life. In a word, the agricultural college has developed in the short space of half a generation from an insignificant secondary school for boys into a public service institution of the highest scientific and social significance. And in doing all of this it has not sacrificed its instruction, but, on the contrary, it has developed scientific and practical courses along all phases of the agricultural profession and of country life, not only for under-graduate, but for graduate students as well, and today no phase of graduate work in this country or abroad stands higher, either in aims or in facilities for work, than does graduate work in agriculture, especially in connection with the experiment station.

"This is where the agricultural college differs from educational institutions of the older order. Instead of aiming to benefit individuals only for personal advantage or satisfaction, it educates men in order to influence directly a whole profession, and indirectly the lives of half our people. Instead of seeking truth for truth's sake, it pursues it with the determination of understanding principles and then of applying these principles directly to the development of human life. Because this information is applicable to business, the agricultural college has been accused of commercializing education, whatever that may be, but in the practical working out of its problems this new kind of college is quite unexpectedly proving to be intensely humanistic, more humanistic, indeed, than even the old-line institutions, because its ultimate purpose is the raising of the general level of civilization, first by providing the means, then by arousing the instincts, and afterward by pointing the way to the community as a whole.

"Its service aims not at the favored few, but at the commonwealth as a whole, and its influence is exerted not only along professional lines, but social and religious as well. The agricultural college is, in brief, a public service institution of the highest order.

"Now, this fact carries some important corollaries and leads to some fundamental conclusions. First of all, the student bears a new relation to this kind of college. He and his interests are become the means to an end and not the end itself. If he is to be educated in this kind of college, it is

primarily for public reasons and not for private advantage. The public does not educate Smith in order that he may prey upon Jones—and Thompson and Schneider who do not or cannot go to college. The public educates Smith at its own expense in order not only that he may take care of himself and his, but that he shall do it without distressing others through his educational advantage, which he might claim as his personal privilege if he had paid for it. Still further, this product of the state-supported college, Mr. Smith, must not only succeed without distressing his neighbor, but he is in duty bound to be ingenious and active in establishing and maintaining such wholesale conditions as shall enable Jones and Thompson and Schneider to be the better off because Smith was sent to college.

“There is more interest, for example, in demonstration fields than there in experimental fields. It is possible at any time that some governor or leading legislator may fail to understand that the college land is an out-of-doors laboratory and not a model farm. He may assume that the buildings in which animals are kept are for that reason barns, and that they ought to be like farm barns, that they may be copied directly. The best friends of the institution may forget that its real business is invention and the discovery of principles and their application, not the making of a collection of models which man may cart home and use without mental application. The public demands and will pay for the finished product, but it is likely to be impatient if not oblivious of the slow process of discovery. It puts a slight premium upon facility of expression as compared with accurateness and soundness of knowledge. It may wear out a faculty in making demands upon it and by its very patronage prevent its own recuperative powers. It may do all these things, but they are only evidences of interest. I am convinced that as the public settles down in its relation to these colleges, its demands will be reasonable and its support liberal.

“In this connection we must remember that all service of this sort is enormously costly as compared with the old-time collegiate instruction, but the results are magnificent.”

The Farmers' Clubs have also, more recently, been of great assistance to the college, both in encouraging its work and in bringing pressure to bear on the legislature for appropriations. In his address as president of the State Association of Farmers' Clubs at the semi-centennial of the College, L. Whitney Watkins said:

“Our organization has been from the first very closely associated with this institution. Six of the thirteen ex-presidents of the State Association of Farmers' Clubs are graduates of Michigan Agricultural College and of the remaining seven, three are the fathers of M. A. C. men. I think the professor of animal husbandry will tell you that this is a pretty good pedigree.”

CHAPTER XV.

COLLEGE PUBLICATIONS.

For the purposes of consideration here the publications of the College are treated in two groups: first, the official college publications and second, student publications.

I. OFFICIAL COLLEGE PUBLICATIONS.

The reports of the College for the years 1857 to 1860 are to be found in the reports of the superintendent of public instruction. In 1861 there was no report separate from that of 1862. The reports for 1862 and 1863 are to be found in the joint documents of the state for those years.

REPORTS OF THE SECRETARY OF THE STATE BOARD OF AGRICULTURE.

The chief duties of this Board of Agriculture are to serve as the trustees of the College. The first published report of the Board appeared in one volume in 1862. The Board has published a volume every year since with the exception of 1881-82, when one report covers two years. Each of these volumes usually contains a financial report of the secretary and of the treasurer; a report of the president of the College; a report of each member of the faculty; occasionally it contains acts of the legislature. In the volumes from 1875-1883 inclusive, are reports of a large number of experiments made by professors of the College, previously to the adoption of the policy of including numbered bulletins as a part of the reports. Volume 28 (1884) is the first to contain numbered bulletins. The reports contain papers pertaining to soils and crops, farm implements, resources of the state, domestic animals, injurious insects, injurious fungi, fruit growing, meteorology, forestry, college exhibits at three world's fairs, state fairs and county fairs. The reports of farmers' institutes begin in 1875 and continue to 1890 inclusive, when they are much abbreviated until 1894-95 when they disappear and are continued in separate volumes.

The report of the secretary of the State Agricultural Society beginning in 1849 and continuing to 1856 inclusive contain much information concerning the origin of the Agricultural College.

In 1909, a new classification of the publications of the Experiment Station was adopted:

"First, popular bulletins, embodying such publications as are of general interest to the farmers of the state, dealing, as they do, with ordinary practices. These are sent out to the entire mailing list, which now (1913) comprises about 65,000 names.

"Second, special bulletins. This list comprises those that are of local interest only, such, for instance, as sub-station reports, or other publications which deal with questions of interest only to people of a limited area.

"Third, technical bulletins, consisting of the reports of scientific research work such as is carried on in connection with the Adams projects, and in

some cases they are suited only for the use of men actually engaged in similar lines of work. They may also consist of reports of progress made in connection with research work. It is not believed that this class would be of interest to the farmer generally, but both technical and special publications can be secured, by all who desire to procure them, by addressing a card to the mailing department of the Experiment Station.

"Fourth, circulars. This group consists of four to six page publications dealing with practical topics upon which there seems to be a general demand for information. In many instances this demand is determined through inquiries which come to the various offices of the Experiment Station. The idea is to produce a brief, plain, simple, practical publication which will relate to one specific subject only, that may be directly helpful to the farmers.

"Fifth, press bulletins. For several years the institution has been issuing from two to five hundred word articles to the press of the state. The object of this has been to disseminate information through the press to the farmers of the state, thereby getting it into their hands quickly in case of emergency as the demand may arise through special causes."

THE COLLEGE CATALOGUE.

The College has published a catalogue annually. Up to 1861, this was but a list of names. A catalogue in the form of a pamphlet for distribution has been published each year beginning 1861. Each succeeding catalogue gives much matter of a historical nature that need not be repeated in this connection, telling the purposes of the College, its equipment, its methods, its courses of study, its scope, the requirements for admission, the expenses of a student.

ALUMNI CATALOGUE.

A catalogue containing names of all officers and graduates was printed in each of the following years

1873, 1876, 1879, 1882, 1885, 1888, 1911.

GENERAL CATALOGUE.

The first general catalogue containing names of all officers, all graduates and all non-graduates was published in 1900. Up to this time (1913) this is the only catalogue of the kind ever printed.

FARMERS' INSTITUTE ANNUAL.

A Michigan State Farmers' Institute has been published by the College every year since 1894.

SEMI-CENTENNIAL CELEBRATION OF MICHIGAN AGRICULTURAL COLLEGE.

A book of 377 pages containing the addresses delivered at the semi-centennial celebration, together with letters of congratulation and other interesting papers was published by the College in 1897.

II. STUDENT PUBLICATIONS.

THE BUBBLE.

Sometime in the spring of 1868 the members of a college society called the "Stoical Pen Yanker's Society"—(S. P. Y. S.) proposed and finally carried into effect a project for publishing a sheet designed mainly as an "escape valve" for the superfluous fun of the society. F. S. Burton was chosen editor, and impelled by his vigorous "blowing" the *Bubble* soon sailed forth into a journalistic atmosphere, and its voyage was probably not less showy and sudden than would be that of its namesake. The first number was issued May 30, 1868, and was followed in the same year by issues on June 20, July 18, August 8, August 29th, September 9th and October 24th. The contributions were mostly from members of the S. P. Y. S., namely, Chas. E. Bessey, F. S. Burton, Roswell Lillie, William D. Place and Clarence Simonson. At the close of the year F. S. Burton and W. D. Place graduated, and for some reason the boys did not continue the publication of the *Bubble*. "Hezekiah Z. Solemnstyle" was the editor,—Frank Burton 1868.

Thus perished the first attempt at journalism in our College.

The writer makes some random quotations from this ancient journal, copies of which are in the library of the College.

LANSING.

"The town is situated on one of the curves of beauty of the Ram's Horn R. R. and is three or four miles, more or less, westward from the Agricultural College. Derives much of its importance from its propinquity to the above named establishment. It is bounded on the north and west by the "Big Marsh," on the east by illimitable mud, and on the south by infinite Swamp. It is also on the Grand River; Grand River is noted for polywogs and cranes, and mostly navigable by this sort of craft.

"Lansing is divided into Lower Town, Middle Town and Mackerel Point, the last-named division lying at the junction of the Grand River with the classic Red Cedar (made classic by running through the grounds of the Agricultural Farm, popularly so called).

SENIOR'S SONG.

"Oh! I've worked hard since I set out
 To gain a Lib'ral education;
 But now the time has come about,
 And I am near to graduation;
 A few days only yet I stay,
 To study, or to use the poney,
 And then oh Schools, farewell for aye,
 For I am bound for Matrimony.

VALEDICTORY.

"Our editorial labors in this field are almost over. We promised and took subscriptions for seven numbers of our paper, and this is the seventh. All that we promised our patrons has been performed.

"First and foremost, the students here have supported us with an extent of liberality which was hardly anticipated by us. With only one or two exceptions, they have been subscribers, and not content with taking one copy apiece, many of them have taken two, three and even four and one has taken regularly six copies."

THE SPECULUM.

The *Speculum* was published from August 1, 1881 to November 15, 1895. For about seven years it was published quarterly, after which it appeared monthly during the college year.

The paper became unpopular, got in debt and ceased to exist.

THE M. A. C. RECORD.

The M. A. C. Record was begun January 14, 1896. It was edited by the faculty assisted by the students and was published weekly excepting during the long vacations.

No names of the faculty were given as editors for over five years, but the following persons performed the work: Dr. Howard Edwards, Professors Levi R. Taft, F. S. Kedzie, H. K. Vedder, Paul Chamberlain, W. O. Hedrick, Paul Woodworth, Dr. W. J. Beal, A. A. Crozier and Dick Crosby.

The issue beginning April 9, 1901, gives the name of the staff of the Record: Howard Edwards, P. H. Stevens; beginning April 8, 1902, P. H. Stevens was given as managing editor; September 21, 1903, Gerret Masselink became managing editor.

September 20, 1904, B. A. Faunce became managing editor; June 22, 1909, W. J. Wright became managing editor; September 21, 1909, Charles Henley assumed control; April, 1910, B. A. Faunce again became managing editor. During all these years, President J. L. Snyder assumed some general oversight of the *Record*.

When organized the following five societies assumed more or less responsibility in editing the *Record*: Natural History Society, Delta Tau Delta, Phi Delta Theta, Union Literary and Eclectic.

JUNIORS' ANNUAL.

In 1888, when the juniors called themselves the class of '89, they decided to publish an illustrated "Annual"—The Harrow. This custom was followed by some of the succeeding junior classes, occasionally with a change in the name. The volumes contained a "write-up" of the great achievements of each class, of class scraps, of athletics in variety, of the societies, of members of the faculty and of entertainments, besides stories, jokes, puns, grinds, caricatures, verses intended to amuse, a short history of the College, military organizations. Here is the list:

1. The Harrow by the class of '89. (Pub. in September 1887, no dedication.)
2. The Harrow by the class of '90. (Pub. intended for 1888 but delayed into '89, no dedication.)
3. The Harrow by the class of '91. (Pub. in 1889; dedicated to all who are interested.)
4. The Heliostat by the class of '97. (Pub. in 1896. No dedication.)
5. The Wolverine by the class of '01. (Pub. in 1900, dedicated to Dr. Kedzie.)

6. Gluck-Auf by the class of '05. (Pub. 1904, dedicated to Dr. Edwards.)
7. The Jubilee Wolverine by the class of '08. (Pub. 1907, dedicated to the Alumni.)
8. The Wolverine by the class of '11. (Pub. 1910, dedicated to Dr. Beal.)
9. The Wolverine by the class of '12. (Pub. 1911, dedicated to Chester L. Brewer.)
10. The Wolverine by the class of '13. (Pub. 1912, dedicated to Mrs. Linda E. Landon, Librarian from 1891.)
11. The Wolverine by the class of '14. (Pub. 1913, dedicated to Addison Makepeace Brown, Secretary of the College.)

THE HOLCAD.

Under this title, the students began publishing a paper in the fall of 1908. For a time it was issued once in two weeks, later every week. So far it has been a very creditable effort. It kept improving and June, 1913, it is a most excellent publication.

THE EAGLE.

In the meantime, about 1890, a unique little sheet appeared bearing the soaring name of The Eagle, edited and printed by a boy ten years old, "the youngest editor in the country." Roscoe Kedzie, the editor, was a grandson of Dr. Kedzie. The Eagle had a very small beginning, a sheet about two inches square, issued once a week for one cent a copy. It grew and prospered for a time, giving the local news at the College that interested the people on the campus and the students who had left the College but wanted to keep in touch with current events here. At last the question came up whether the editor should run a small paper for his life's work, or seek an education, and Roscoe wisely chose the latter, and the Eagle went to roost.

THE WEEKLY STAR.

After one "monthly" number published March 1, 1910, this paper was issued weekly. It was a single sheet, three by four inches, with an occasional double number. It was printed in the dwelling of Ray Stannard Baker, '89, by James Stannard Baker & Co., the "Co." consisting of Donald Blaisdell. September 1, 1910, Blaisdell Brothers became proprietors and the location of the office changed as Master Baker was moving to Amherst, Mass. In 1912, the paper was sold to Seeley Brothers, as the Blaisdells moved to Alma. The first proprietor was about ten and one-half years old when he began publishing and was a grandson of Dr. Beal.

There have been published occasionally two or three small sheets each intended for distribution among the members of a society or fraternity.

MICHIGAN BIRD LIFE.

This volume of over 800 pages was prepared by Professor W. B. Barrows and has been printed during the past year by the College. It reflects great credit on the author and the publishers.

The writer begs to quote from three eminent naturalists:

"The life histories are especially full, with often somewhat extended discussion of the economic relations of the species to agriculture, for which the author is especially fitted by his 25 years of study of the complex relations

of birds to insects and crops as a specialist in this field, first under the U. S. Department of Agriculture and later at Michigan Agricultural College.
* * * The volume will take its place among the best of the state ornithological manuals." (J. A. Allen, *Science* XXXVII, 372.)

"It is a credit to American science, to the author and to his *alma mater*."—
(Prof. R. P. Bigelow, *The Technology Review*, Boston XV, 234.)

In a personal letter to the author, dated Aug. 9, 1912, Professor Herman Schalow of Berlin, president of the German Ornithological Society says:
"I am very much pleased with the concise but exhaustive manner in which you have treated the birds of your country, I regret very much that German ornithology does not possess such an important and valuable piece of work."

CHAPTER XVI.

MONUMENTS.—DONATIONS.

When four of the best years of one's life have been spent in college, he cannot but form many associations, and have pleasant recollections regarding them. Indeed, no one, unless he is of a very cold temperament, can be wholly indifferent to the college from which he graduated. There are so many pleasing things about college life that are ever afterward fresh in the memory and cherished by it, that something is due in return. To commemorate those days in a worthy way should be one of the last duties of the senior class. Let them in some way beautify the surroundings, or aid the college itself in doing more efficient work. Objects placed on the lawn, that will



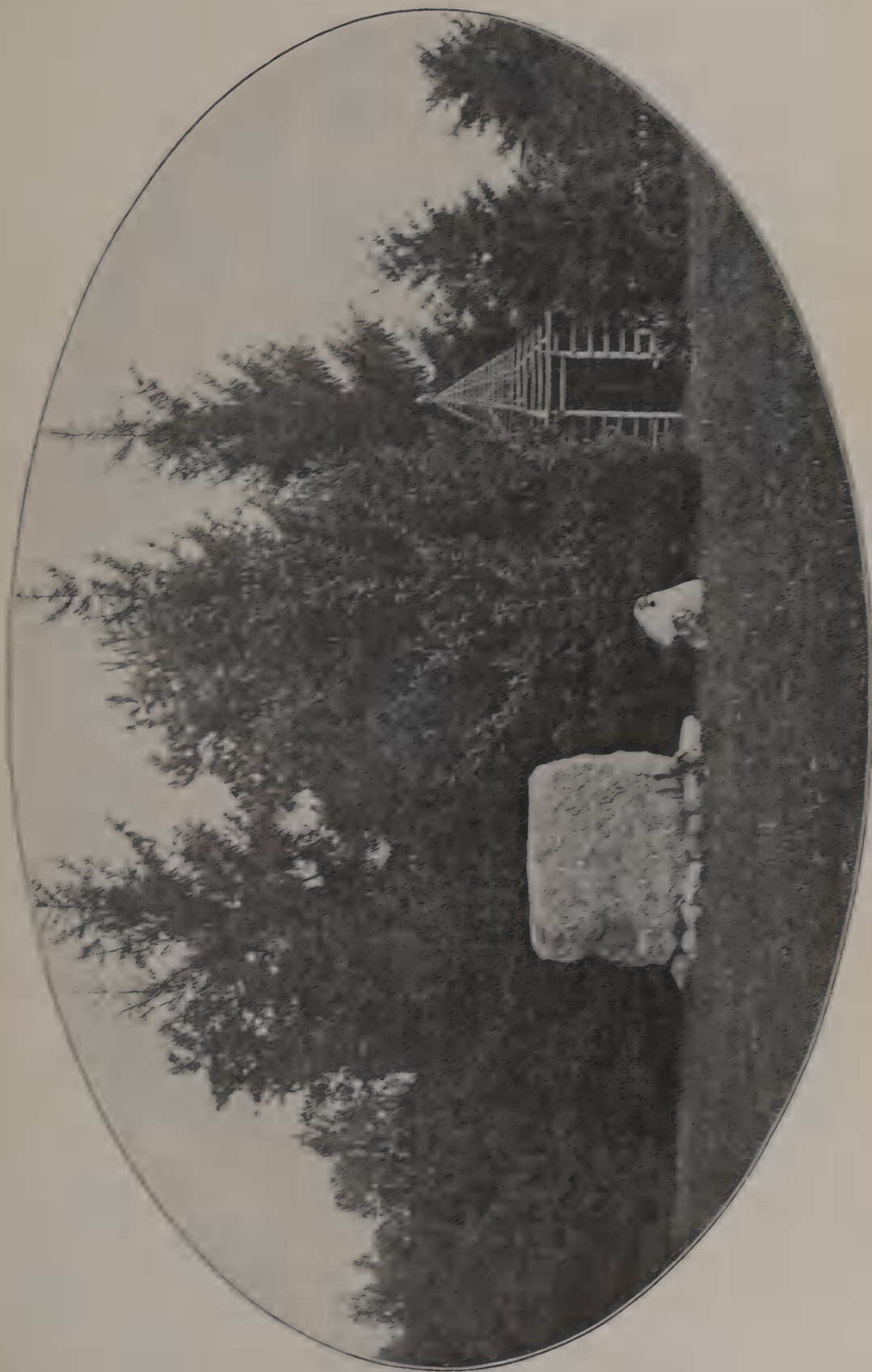
Fountain near the greenhouse.

create interest and draw the attention of visitors, are beneficial to the college. It will tend to attract those who are contemplating going to college; for a student prefers not only a good school, but one that is pleasantly situated. A contribution to the library or museum is a project that would reflect credit on any class. A gift of apparatus to some of the different departments would result directly in much good in many ways.

Portraits of the first graduating class, 1861, on one canvas, were painted by Mr. Reed of Kalamazoo, through the efforts of the Alumni Association.

The class of '73 selected a large boulder, found where a glacier left it, on the delta a little northwest of the home of Dr. Marshall, the second house from the east end of the delta, and had it set up on the campus near a grove. The man who chiseled the word "class" on the stone spelled the word with one "s." When another was added, he cut a little place at the left to help make the word symmetrical; as Dr. Kedzie put it, "Curses, not loud but deep, on the head of the man who, if not sickly, had bad spells."

In the library is an impression with thick paper, taken when moist, of an Egyptian monument representing an ancient plowman at work. This was made by H. G. Reynolds, '70, and presented to the College.



Big Stone and Summer House. Class of '73.

The class of '83 put up and had in working order at commencement a fountain near the greenhouse, located by Adam Oliver, the college landscape gardener. It is eight feet, four inches high, with a basin twenty feet in diameter, and cost two hundred and twenty-five dollars. The president of the class, Mr. D. C. Holliday, Jr., formally presented it to the College at two o'clock, p. m., August 13th, 1883. President Abbot accepted it in behalf of the College. This action of '83 indicates the love and respect its members have for their alma mater, and that in the years to come she will hold an unusual spot in each one's heart.

At the suggestion of friends of the College, the widow of Hon. Hezekiah G. Wells, a member of the State Board of Agriculture for 1861 to 1883, presented a fine portrait, in oil, of her late husband, by George W. Reed.

A student from England, after leaving the College in 1886, not wishing to have his name published, gave three hundred dollars which was used to purchase a flag pole and books for the library.

Some students, in 1886, cut and presented to the botanical museum some fine specimens of pieces of trees blown down by a tornado that passed over near the "deep-cut" northwest of the College—distance five miles.

A committee selected at a meeting of the alumni, consisting of E. M. Shelton, '71; W. W. Daniels, '64; George A. Farr, '70; C. L. Ingersoll, '74; Mrs. M. J. Carpenter, '81, reported in the *Speculum* of May 10th, 1889, that "It was finally agreed by the committee that the testimonial should take the form of an oil portrait of Dr. Kedzie, to be painted by some competent artist, at a price to be agreed upon and that the painting should have a permanent place on the walls of the College library, provided the consent of the State Board of Agriculture could be obtained." The artist was S. L. Wise; the portrait was painted in 1888.

The Alumni Association engaged Mr. Conely of Detroit to paint the portrait of Dr. T. C. Abbot. Reported in the *Junior Annual* by the class of '90.

In 1899, B. K. Canfield, '89, of New York City, for the members of the Iota Chapter of the Delta Tau Delta fraternity, prepared a plaster bust of Hon. Edwin Willits. It is pronounced an excellent likeness; it is deposited in the library.

At the meeting of the alumni in June, 1900, Prof. P. M. Chamberlain, '86, in behalf of the members of the fraternity, formally presented the bust of Ex-president Willets to the College.

Senator James McMillan, of Detroit, purchased for the College 52,000 specimens of insects—the Tepper collection of Lepidoptera, and the Austin collection of Coleoptera.

I may have overlooked some donations, certainly no funds for fellowships, a gift of the Library Building, or retiring pensions or large endowment funds. Gifts from classes of students have been mentioned under the head of monuments.

Note the report of Professor Barrows in 1890:

"In commenting upon the McMillan collection, and other advantages for advanced work in the department, in the report of last year, I suggested the probability that students would be attracted to the College to study. The prophecy was fulfilled far beyond my expectations. Ten students spent the entire winter vacation in the study of entomology. One of these was from Japan, one from South Dakota, one from Indiana, one from Ohio, one from Wisconsin and the others from Michigan. All but three of these gentlemen were post-graduates. These gentlemen spent all their time in the laboratory,

were entirely faithful to their work, and all made most excellent progress. Several students have already expressed a wish to spend the coming vacation in a like way."

Through the efforts of Dr. Beal, Secretary Brown placed two monuments on the level of the lawn. The inscription on one shows that it marks the



Fountain, one side for people and the other side for horses. Class 1900.

"N. E. corner 'Saint's Rest,' built 1856; burned Dec. 9, 1876." This can be seen about one hundred feet east of Williams Hall. The other one is placed about 200 feet southwest of the Armory and marks the "N. E. corner Botanical Laboratory; built 1879, burned March 23, 1890."

Gifts have been numerous and, from year to year, were noticed in the reports. The gifts consisted of a few young animals, new farm implements, books, trees, shrubs, seeds and other things. From the herbarium of Har-

vard University have come 4,000 or more dried plants; from the U. S. Department of Agriculture at different times about 4,000 species; from Samuel M. Tracy, '68, over 700 dried plants.

The class of 1900 set up a massive drinking fountain between the Library and Williams Hall; one side for people, the other for horses.

By special request of friends, Honorable Franklin Wells, for thirty years a member of the Board of Agriculture and for a considerable time its president, employed Professor W. S. Holdsworth to paint his portrait for the College. This portrait was formally presented to the College at the time of Commencement, June, 1903.

In 1903, without solicitation or encouragement, Dr. W. J. Beal presented the College an oil portrait of himself, by Ives, of Detroit, temporarily displayed in the Woman's Building. Some years before, a few alumni had proposed something of the kind, but the project was abandoned.

IN HONOR OF THE CLASS OF '61.

Perhaps the most impressive ceremony ever witnessed at the College, occurred on the college drill grounds, one Monday afternoon of May, 1911, when all of the cadets, a large number of G. A. R. veterans and many visitors gathered together to fittingly honor the members of the class of 1861 who left their studies on the eve of graduation to answer the summons of President Lincoln. From the moment of the first call of Assembly till the closing verse of America, the whole service was stirring and impressive.

Brief speeches were made by Governor Osborn and Hon. Patrick H. Kelley.

At the close of the addresses the bronze tablet which had been prepared to commemorate those students of the College who offered their lives that the Union might be preserved, was unveiled by George A. Saxton, Foster Post G. A. R. and C. W. McKibbin of the Cadet Regiment.

THE YEAR CLOSING JUNE 30, 1913.

During this year the junior class placed a sanitary drinking fountain near the station of the street railway.

The seniors placed near a pin oak a copper plate containing the names of four members of the class who had died during the past four years.

A large number of alumni and members of the faculty contributed to furnish a portrait of Dr. A. J. Cook, for a long time Professor of Zoology and Entomology, at present Commissioner of Horticulture for California; also a portrait of Dr. W. J. Beal, for forty years Professor of Botany. The former portrait was presented by Hon. L. Whitney Watkins, the latter by Hon. J. W. Beaumont, President Snyder in a fine speech accepting them on behalf of the State Board of Agriculture.

GIFTS TO THE LIBRARY.

Soon after beginning her work for the College, Mrs. L. E. Landon, the efficient librarian, had built a case in which to place books and pamphlets given by former students. She furnishes the following list of persons who contributed:

- | | |
|------------------------------------|-----------------------------------|
| M. D. Chatterton, in '61. | E. G. Lodeman, '89. |
| F. Hodgeman, '63. | W. J. Meyers, '90. |
| G. S. Beasley, '68. | F. B. Mumford, pam. |
| W. K. Kedzie, '70, (from R. C. K.) | K. L. Butterfield, '91, pam. |
| P. H. Felker, '71. | W. O. Hedrick, '91. |
| F. J. Groner, '74, pam. | H. W. Mumford, '91. |
| A. A. Crozier, '75. | C. F. Wheeler, '91. |
| L. G. Carpenter, '79, pam. | L. C. Brooks, '92. |
| F. A. Gulley, '80. | W. Paddock, '92, pam. |
| L. H. Bailey, '82. | B. W. Peet, '92, pam. |
| H. E. Weed, '83. | L. J. Briggs, pam. |
| C. P. Gillette, '84, pam. | U. P. Hedrick, '93. |
| T. D. Hinebaugh, '85. | M. G. Kains, '95. |
| J. E. Hammond, '86. | E. D. Sanderson, '97. |
| L. A. Clinton, '88, bulletins. | G. F. Richmond, '98, pam. |
| L. H. Dewey, '88, pam. | M. H. Lapham, '99, pam. |
| F. H. Hall, '88. | G. C. Sevey, '03. |
| F. H. Hillman, '88, bulletin. | R. C. Potts, '06. |
| N. S. Mayo, '88. | J. A. Rosen, '08, pam. |
| W. M. Munson, '88. | Among the above were four sets of |
| G. L. Teller, '88, pam. | "The Bubble." |
| R. S. Baker, '89. | |
| G. C. Davis, '89, pam. | |
| S. F. Edwards, '89, pam. | |

No doubt the writer has omitted the names of many others who from time to time have given books or pamphlets or papers to the library.

CHAPTER XVII.

MUSEUMS AND BOTANIC GARDEN AND ARBORETUM.

Strange to say, in 1912 there was no agricultural museum, though one was urged sixty years ago, and later, after the College was opened. A small amount of material is stored in some of the rooms of the new agricultural building.

To a very great extent a professor long in service will plan the work of his



Offices of President and Secretary, Library and Museum.

department to suit his taste and training. Very few will succeed in the preparation and maintenance of an attractive botanic garden or museum or of an agricultural museum. To some extent the person for such work must be born for it as well as trained for it.

As has often been noticed, it is folly to introduce any phase of agriculture or botany into a common school or high school unless there is some one who is trained for the work and who will undertake it with zeal.

FRAGMENTS OF SEVERAL COLLECTIONS.

The horticultural department has a very good exhibit of "wax fruits," and vegetables. In the attic of the botanical building was stored from 1902-1912 a considerable quantity of valuable specimens—many of timber.

On the second floor of the dairy building, the department of forestry has accumulated a beginning of a museum, including specimens of wood, seeds of trees and tools used in lumbering.

The Veterinary division possesses some valuable materials, such as are needed for use in the laboratory.

The Engineering division has accumulated specimens of the work of students such as would constitute an exhibit at fairs.

THE GENERAL MUSEUM.

(Partially adapted from Professor W. B. Barrows in M. A. C. Record Nov. 3, '96).

After the botanical museum was started the other museum containing the mounted animals, fossils, etc., was called the general museum. This is well kept and occupies a single room, 48x58 feet on the second floor, besides a few small accessory rooms for storage and for preparing specimens for exhibition.

Many of the best specimens were purchased of Ward's Natural Science Establishment, Rochester, New York. There are very few inferior and commonplace specimens. The cases and collections are inventoried at upwards of \$15,000, and compare very favorably, in extent and appearance, with those of any similar institution in the country.

There are about eighty mounted mammals, nearly half of which are of the size of a fox or larger. The largest is a fine bull moose from northern Minnesota, and other hoofed quadrupeds are the elk, deer, caribou, prong-horned antelope, and big-horn or mountain sheep.

The first thing to attract the attention of the visitor to the museum is "Old Buckskin." Mr. Baker, father of A. D. Baker, '89, and L. H. Baker, '93, lived in Lansing, to which city he returned after the civil war, bringing with him a favorite horse, Old Buckskin. When about thirty years old, the old horse died suddenly; the skin was mounted by C. B. Cook, '88, and placed in the college museum. The horse was famous, as one ridden by Lieut. Baker in charge of the party that captured J. Wilkes Booth, soon after his assassination of President Lincoln in Ford's theatre in Washington.

The flesh-eaters (Carnivora) are remarkably well represented, the list including a lioness and whelp, jaguar, panther or puma, Canadian lynx, wild cat, timber wolf, prairie wolf, red fox, gray fox, wolverine, badger, otter, fisher, marten or sable, mink, weasel, skunk, raccoon, grizzly and black bear and seal.

The collection of birds, particularly of local species, is unusually full; probably not a dozen common ones absent, though many of the rarer species are lacking. In all, there are over 500 mounted birds and about 800 bird skins. The museum is fortunate in possessing four mounted specimens and one skin of the passenger pigeon, once so abundant in this state. One case contains a fine collection of European birds often mentioned in poems and prose by the older writers.

Snakes, lizards, tortoises, amphibians, and fish, are shown mainly by alcoholic specimens, but a few well-mounted skins are on view.

There is space only for bare mention of the shells, crustaceans, starfish, sea urchins, worms, corals, sea-fans, and sponges which may be found on the shelves, but a good explorer with "true scientific spirit" will make some surprising discoveries there.

The main insect collection, which is in constant use in the practical work of the College and Experiment Station, is not kept in the museum proper, but can be seen by anyone sufficiently interested to knock at a neighboring door and ask for it. In order, however, to give the casual visitor a little idea of the beauty and variety of at least one order of insects, about 400 butterflies and moths from the McMillan and Davenport collections have been mounted in Denton's butterfly tablets and placed on view in the general museum.

The systematic series of fossils probably is up to the average for institutions situated as we are.

The collection of minerals, although containing many fine things, is not up to the plane of the rest of the museum.

"The collections are such as any college might be proud of, and they are a source of pride and gratification of scores of thousands of citizens who visit the College each year and gather pleasure, information and inspiration from each visit. Such collections are worthy of a better setting, and although several new buildings are needed an impartial canvas of the needs of the several departments would show clearly that the department of zoology, physiology and geology, with its large and increasing museum, has a stronger claim for a new building than any other single department. The existing collections alone, if properly displayed, would fill three times the space now available."

THE BOTANICAL MUSEUM.

In 1870, when Dr. Beal first became a member of the faculty, there were some bottles of seeds and a few other things that were suitable to become a part of a museum. The first botanical museum worthy of the name, and set up in a place to attract many visitors was installed on the second floor and the gallery of what was termed the botanical laboratory.

The samples of timber sent to Philadelphia in 1876, and to New Orleans in 1884, were polished, relabeled, and with many additions placed on exhibition. As most of this museum was destroyed by fire in 1890, a bare mention of some of the best features is given here.

There were 14 samples of natural grafts as they appeared above the ground, and samples of many more as they appeared below ground; some of them were of large size; four logs grown over deer's antlers; two trees containing nests of wood-peckers; quite a number of slabs of our leading sorts of trees; samples of 13 sorts of posts formerly buried to show that it makes no difference which end up they are set in the ground; small trees eight or ten years old from the arboretum; sections of logs of several kinds showing how they check at the ends as exposed in the mill yard; cuts showing much sap-wood, much heart-wood, or the heart one side the center; a number of trees injured by vines; several trunks which were very winding; samples of many kinds of knots cut and polished; some tough boards from second growth trees, some showing defects caused by dead limbs which remained on the tree; polished boards of our native and cultivated trees and shrubs in great variety; a collection of barks, of peat, of pressed wood to imitate carving; very thin sections of seventeen species of woods suitable for the school room to use as illustrations; truncions and cross-sections of our native woods; samples damaged in various ways by insects; pieces of trees damaged by lightning, by mice, by squirrels, by birds, and by horses, where the owner failed to provide a hitching post; a very good collection of nuts and cones, and cotton; a fine collection of the cereals, such as wheat in various con-

ditions and from several countries; twenty-seven sorts of sorghum, rice in the bundle as grown at the south; hybrids between wheat and rye, 90 species of grasses in bunches; roots taken from tiles which had been obstructed; samples of labels and plates for exhibiting apples and pears as used by various horticultural societies; a typical set of fossil plants; a case devoted to Indian corn classified as dent, flint, tuscara, sweet, pop.

Among the most interesting of these are samples grown from the "earliest" times by Indians in Florida, in Dakota, in Canada; corn in various stages of manufacture, corn with a different even number of rows from four to thirty-six; ears with the rows running spirally, ears without evidence of rows, ears of many colors, and ears each one of which shows more than one color of corn, ears doubled at the end, corn inside the cob, ears which taper very much, ears defective, ears with much silk, ears where every kernel is covered by a husk of its own, a stalk containing seven ears, one fifteen and one-half feet high with the tip of the ear nearly twelve feet from the ground. This collection of Indian corn was thought to be very complete for this country, and the best the writer has ever seen.

In one case was a beginning of a typical collection of mosses, liverworts, lichens, fungi, ferns, rushes, etc., so arranged that a visitor may get a little notion of these families of plants; large numbers of large photographs, especially those of trees and timbers. This museum occupied much time of the professor of botany for fifteen years.

The total number of entries of articles was 2,775, of which 1,895, over three-fifths of the whole, were collected by Dr. Beal.

This museum was so unique and attractive that it was not unusual to hear visitors remark something like the following: "I have often seen museums of animals, but this one of plant products interests me the most of any, because it is new."

THE HERBARIUM.

The following is taken from the report for 1910:

"The collection is in first-class condition. To find any traces of insects' work is a rare thing. Specimens are by no means limited to grasses, clovers, weeds and ornamental plants, but include large numbers of other things in variety, as will be seen by this summary:

Seed plants, ferns, and their allies.....	82,069
Mosses and liverworts.....	2,010
Lichens.....	1,186
Fungi.....	17,953
Algae.....	2,470
	<hr/>
	105,688

"The collection is especially rich in Michigan plants, much the best of any in existence. Seven thousand at one time were purchased of C. F. Wheeler in 1863, 20,000 or more were presented to the College by Mrs. Clarissa Babbitt, the wife of Dr. Dennis Cooley of Macomb county; 5,000 were purchased of the son of Dr. D. Clark of Flint, Mich.; 2,886 were purchased of the widow of G. H. Hicks; 6,705 were purchased of Prof. Chas. A. Davis while teaching in the University of Michigan. All of the above collections are distinguished especially for the Michigan plants therein contained. Add to these the work of a host of other collectors in various parts of Michigan. I enumerate some of them:

"L. H. Bailey, Bronson Barlow, E. J. Cole, A. A. Crozier, L. H. Dewey, C. K. Dodge, O. A. Farwell, U. P. Hedrick, B. O. Longyear, C. D. McLouth, A. A. Pelton, A. J. Pieters, H. C. Skeels and G. H. Hicks.

"Especial pains have been taken to make the collection complete in grasses, sedges, clovers, weeds and economic plants in general. For example, A. Phelps Wyman in two seasons collected over 1,700 numbered and authentic herbarium specimens of trees and shrubs in the Arnold Arboretum, Massachusetts. Hundreds of my own collection—more than 4,000 specimens—are included in this herbarium.

"The chief value of a good herbarium to this College is to aid in identifying plants received in the botanic garden, planted on the campus, or plants of the experiment station. You would be surprised to learn of the large number of cultivated plants, weeds, and plants from forests which are sent the department of botany to learn name, use, whether poisonous, whether a weed, and if noxious, the easiest way to combat. Samples of grass seeds and clover seeds are sent asking names of weed seeds therein contained.

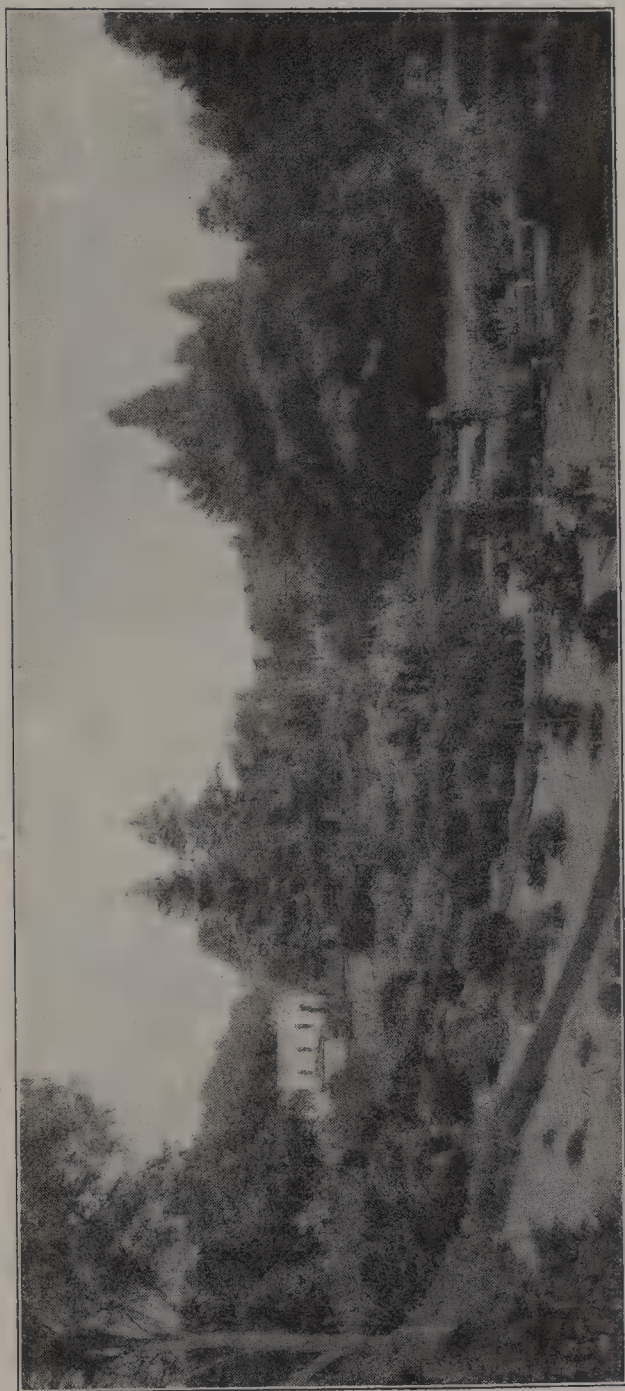
"For more than twenty years the writer examined every new specimen, comparing it with the name in the catalogue, checking everything that was new in the herbarium. Again, specific directions are given an unskilled person, telling how to poison, mount and put in place every acquisition. When mounted the writer inspected every specimen to know if the work had been well done."

BOTANIC GARDEN.

Instead of waiting thirty to forty years for an endowment of 50,000 to 100,000 dollars to support a botanic garden, the writer made a very modest beginning in 1877, or, if we include about 140 plats of grasses and clovers as a botanic garden, then the botanic garden was started in 1873. This garden was started on the bank of a brook northwest of the greenhouse. The stones were a portion of those left over in building the first Well's Hall. The work for some years was performed by students, L. H. Bailey having this "job" during one year. Changes were made and the garden enlarged every year, until 1910, when the area was two and one-tenth acres, containing a few species and varieties over 2,100, nearly all of them hardy in the open and many of them native of Michigan. This space is on both sides of a slow brook with the banks eight to ten feet higher. The plants are arranged in families and each plant sets back of two labels, one above ground containing the name and the other a piece of zinc in the ground, on which is punched a number and the latter are written in a book with the name for each number. It is aimed to grow, in most cases, a patch of each, four feet or more in diameter, enough to fill the eye. During most of the time since the garden was fairly underway the paths were kept in grass. To suit the nature of each plant, there are ponds and bogs, sun and shade, sand, loam and clay.

The garden has always been well kept and, from the first, during the growing season an attractive spot to students of botany and entomology and to great numbers of visitors during at least four months of the year, the best of which are June, July and August, when it is visited by more people than visit any other portion of the College.

Here come for the purpose of learning, the man who keeps bees, also the person who wants to see what plants suit him for growing about his home; among visitors who have been here more than once are four professors of the University, some from the State Normal College and some from other states.



Botanic Garden, looking south.

B. T. Galloway, chief of the Bureau of Plant Industry, was much pleased and wanted a garden at Washington like it, only much larger. The garden receives plants and seeds from other gardens and by purchase, and it has helped gardens in about ten other states.

In 1882, and again in 1895, maps were published in the reports in connection with a complete list of plants in the garden, with a device to enable any one to find any plant there grown.

The director of this garden has plenty of perplexing questions that come up, some of which are very disheartening. For some years moles caused much damage, also red squirrels, chipmunks, meadow mice and muskrats; in certain seasons, on certain families, plant lice, snails, slugs, rose-chaffers,



Tool House and Part of Pond, Botanic Garden.

and other insects annoyed us. Hot sunshine, and winter's cold, severe droughts and drenching rains, or unsuitable soil made it necessary to win success by changing the spot where some of the plants were grown. Most perplexing of all, was the habit of the Cedar river in overflowing its banks and covering most of the garden with water, for three to seven days at a time, and if this freshet occurred during the growing season, two or three hundred attractive plants are killed outright and many others are much injured. To overcome this difficulty a section at a time during six years was raised from one foot to five feet or more. To accomplish this plants were removed, the top soil scraped into piles, poor dirt carted in, the top soil replaced and the plants re-set. Some portions of the garden, for this reason, were in poor dress for these six years. Most of the brook now flows under ground through a cement tunnel for nearly four hundred feet.

Again, sunflowers, mints, and several other families seem to poison the soil and pine for a change. Families must have a rotation or new soil must be drawn in where the old soil has been removed.

To increase the area of shade, some six or eight rods square are covered by small old rails, or brush held up by fence posts bearing stringers.

Here the writer humored plants native to the shaded forests, such as ginseng, golden seal, columbo, wild ginger, ferns, wild phlox and a hundred others.

My reports for 37 years give many details of management, and other items of interest to the botanist and the gardener. I close the report concerning the garden with a few statements by visitors, overheard by the gardener, such as "Oh, the lovely pink water-lilies!" "I think this is just the loveliest place!" "Just beautiful!" "This is the prettiest place I ever saw!" "This garden is the dearest little spot!" "These grass walks are so nice!" "My, but this is a swell place!" "How clean and trim everything is kept here!" "The pretty poppies!" "I didn't know there were so many kinds of timothy."

In an old catalogue, 1861, under the heading Botanical Garden is written:

"The College grounds, though but recently laid out, already contain a valuable collection of trees, shrubs and herbaceous plants, selected especially for the illustration of the study of botany." These statements do not refer to one definite area, but to the whole campus.

The details of keeping up the labels and everything else in good condition in the botanic garden occupied the time of the professor of botany one to three hours daily throughout the growing season, but some of this is a change to the professor, a diversion from work in the laboratory. It is estimated that there are at least 5,000 species and varieties of plants growing at the College, including those in orchards, fields, gardens, greenhouse, the neighboring forests, swamps and open places. Truly the botanical department is entitled to rank as a bureau of information, and there is no question that the same is true of the farm department.

ARBORETUM.

To a person accustomed to a new county, a term still applicable to Lansing and vicinity, (1913) it may seem strange to go into the "woods" where the trees are arranged in straight rows. This small artificial forest was begun in 1875 on a piece of land consisting of about one and one-half acres, located next to the road north of the College and the north entrance, just where it is likely to be seen by all the passengers on the south side of the cars going and coming from Pine Lake and Owosso and by those who visit the College. Unfortunately for the visitor, the trees are of different ages, so mistakes are liable to be made in estimating the relative growth and value. Some years ago, this area included 215 species of trees and shrubs, and probably contains about 150 to-day. (1913)

The trees were nearly all started by planting the seeds and nuts, before drying, just where they were expected to remain.

Giving the results of any measurements of the height and diameter would be quite misleading in many cases, because of differences in the soil, space occupied, and for several other reasons, still such measurements may be worth mentioning.

Trees suitable for good telegraph poles have been grown on suitable soil in thirty years.

The numerous mistakes made in the arrangement of the trees are instructive as well as those properly arranged.

CHAPTER XVIII.

WEATHER OBSERVATIONS AT THE MICHIGAN AGRICULTURAL COLLEGE.

Prepared by Dewey A. Seeley.

Eight years before the U. S. Government inaugurated a Weather Bureau, Dr. R. C. Kedzie began making and recording weather observations at the Michigan Agricultural College; this was in April, 1863. These observations were continued faithfully, with almost no interruption, until 1902, the year



U. S. Weather Bureau.

of Dr. Kedzie's death. The work was then taken up by other observers and is still carried on, so that more than forty-seven years' records are on file, showing the temperature, rainfall and other weather conditions which have prevailed from day to day at the College. This is one of the longest continuous records in existence.

Dr. Kedzie's records include not only temperature and precipitation measurements, but also atmospheric pressure, wind direction and velocity, the humidity of the air and the cloudiness, all carefully and systematically recorded. Few men have the interest and persistency necessary for such an undertaking. The results of his work will continue to be of great value for reference and study for years to come.

Dr. Kedzie reported his observations to the Smithsonian Institute until the U. S. Signal Service, (the forerunner of the present Weather Bureau)

was established in 1871. From this time on he was a "voluntary observer" in the government service until his death.

The weather observations made at the College have been published annually, from the first, in the Report of the State Board of Agriculture, and they still constitute a part of that report.

In January, 1887, a regular station of the U. S. Signal Service was established at Lansing, Mich., three and one-half miles west of the College, so that from that date on, a double set of observations was made in the vicinity. The Lansing station was first in charge of Mr. Norman B. Conger. In July, 1891, Mr. Conger was ordered to close the Lansing office and proceed to Detroit, Mich., where he is still located.

Mr. C. Fred Schneider was directed to reopen the station in February, 1895, as section director for Michigan, the signal service having been changed in name to the Weather Bureau and transferred from the army to the department of agriculture. June 30, 1903, the station was again closed and Mr. Schneider was transferred to Grand Rapids, Mich., where he is still in charge of the local office and the climatological work of the state.

Still another series of accurate weather observations has been made in the vicinity of the College, by the State Board of Health, on the grounds surrounding the State Capitol at Lansing. These records were begun in January, 1879, and have been continuous since that date. Mr. Wm. M. Force, of the State Board of Health, has personally made the greater portion of these observations. They include temperature, wind, precipitation of moisture, pressure and, for a number of years, ozone measurements.

From the time of Dr. Kedzie's final illness until May 1, 1910, the observations at the Michigan Agricultural College were made by the experiment station chemists, including Floyd W. Robison and A. J. Patten.

During the summer of 1909 and the winter of 1909-10, the U. S. Weather Bureau constructed a regular weather bureau observation building near the north entrance to the college campus, and on May 1, 1910, the station was opened by Mr. Dewey A. Seeley, who is now in charge, as local forecaster. This station is well equipped with instruments and not only carries on complete and accurate observations but is serving the public with forecasts, weather maps and bulletins, a service which is proving very beneficial to the varied interests of the community, especially to the agriculturist. Telegraphic reports are received each morning from all parts of the country and Canada, stating the weather conditions at the various stations. These reports are charted and serve as a basis for forecasting the weather conditions during the succeeding thirty-six to forty-eight hours.

Dr. Kedzie conducted a course of instruction in meteorology at the College, as a junior and senior elective study, which was discontinued with his death. This work has now been taken up again by Mr. Seeley.

From the long series of records at the College many interesting statistics can be gleaned. Space will not permit any extended summary of this sort, but a few data are noted as follows:

Highest temperature on record 100 degrees, in July, 1887.

Lowest temperature on record —22 degrees, in February, 1885.

Mean annual temperature 46.7 degrees.

Average annual precipitation 31 inches.

Greatest rainfall in any one month 11.35 inches, in June, 1883.

Greatest annual precipitation 48.36 inches, 1883.

Usually the least precipitation occurs in the winter months and the greatest amount from May 1 to July 31. The driest year known was 1894, when but 19.30 inches was recorded.

In 1883, President Abbot and Dr. Kedzie made an effort to induce the Signal Service Bureau at Washington to establish a Signal Service Station at the College for the benefit of farmers.

CHAPTER XIX.

THE CAMPUS AND BUILDINGS.

Elsewhere references are made to the "jungles" of brush, stumps, charred logs, and swamps when the College opened in '57. Northeast of the present Woman's Building was a small tamarack swamp with a pond from which issued the deep voices of bull frogs; and from there along the lowest ground to the present open ditch by the seven willows, and spreading toward the dwelling long occupied by President Abbot, and and later by Dr. Beal, was a huckleberry swamp.

Charles E. Hollister, '61, told the writer that he was the boy who, when a student, cut the tops off many of the native trees on the campus, those in authority believing it would induce them to spread out and improve in appearance. Later years proved the folly of this operation, for the trees had become old and feeble and were making slow growth. Many of them died and from time to time were removed.

Mr. Hollister said that Professor J. C. Holmes, the first professor of horticulture, set out the first evergreens at the College, in 1858, and later, in 1866, others were set. These were chiefly Norway spruces, white pines, Austrian and Scotch pines and red cedars. The pines, he thinks, were brought from Pine Lake by S. L. Kilbourne, now of Lansing, then a student. Many of these trees are still standing, mostly near College Hall and the four oldest dwelling houses.

Years ago Professor Holmes told the writer that Dr. Thurber, the second professor of horticulture, set the oldest of the other kinds of trees and shrubs, such as the Ginkgo tree, bald cypress, Oriental spruce, Cembrian pine, dwarf pine, Siberian pea tree, privet, Kentucky coffee trees, the first Japanese quinces, and spiraeas and a number of others which are now probably gone for one reason and another. *Spiraea triloba* is one of our choicest shrubs. The oldest one that the writer is certain about is located some fifty feet nearly east of the east entrance to College Hall and must have been planted about 1861.

In President Williams' second annual report, made December, 1858, he states that during that year Dr. Asa Gray donated to the horticultural department, from the botanical garden at Cambridge, a large box of perennial herbs; that Isaac Buchanan, seedsman and florist of New York, donated greenhouse and hardy plants, bulbs, shrubs, etc., and that Thomas Hogg and Sons of New York, donated a collection of shrubs and trees, including species of magnolia, paulonia, wigelia, salisburia, etc.

At one time a few white pines grew on the north bank of the river, southwest of the president's house. For many years the writer knew the location of a large pine stump on this bank, and from this place President Abbot removed with his own hands a small white pine and set it three or four rods west and north of the house, 7, he then occupied, later, occupied for thirty-eight years by Dr. Beal. This tree he set for his daughter Mary. Dr. Beal

kept this from running up tall by lopping off at three different times about ten feet of the top. From the same bank, President Abbot removed a red cedar and set about four rods west and south for his son, J. Rodney, '84.

Previous to Dr. Beal's taking charge of the campus, Adam Oliver, an Englishman living in Kalamazoo, was selected by Judge H. G. Wells to make plans for the drives and paths. Dr. Beal set many of the evergreens on the campus, especially about the houses occupied by the president, Professor Vedder, No. 2, Professor Barrows, No. 3. Owing to lack of funds, the assortment was not large. Had he continued in charge later than 1881, he would have thinned these groups of trees and made many substitutions.

During the summer of 1870, when Dr. Beal was first employed at the College, he placed many labels on trees, or near them, giving the common and scientific names. Ever since that time the custom has been continued with a varied degree of thoroughness.

In 1878, and again in 1901, Dr. Beal prepared an alphabetical list of trees and shrubs at the College, the last time about six hundred in number, with a brief popular description, and naming the location where a good specimen of each could be seen. These pamphlets, kept in duplicate, were freely given students who needed them.

By order of the State Board, without the knowledge of or consultation with the professor of horticulture, American elms were ordered set along the entire front of the College land.

In the year 1879, we set two rows; in each row the trees were forty feet apart, those in one alternating with those in the other. The inside row was set four feet from the line fence, the outside one twelve feet from the fence. In later years these elms proved to be an uneven, and mostly a ragged lot, varying much in form, varying astonishingly in size, depending in each case on whether the soil was good or poor.

The following is the description of the campus made by President Abbot in his report for 1882:

"Directly east of the main entrance to the State Capitol is a wide avenue, which terminates, three and a half miles distant, at the gate of the grounds of the Michigan Agricultural College. These grounds are 676 acres in extent, and are separated into two parts by the Red Cedar River, a small stream whose source is thirty miles away. The college farm is mostly on the south side of this river, and the buildings are all in one large park of about 100 acres, on the north side. The college park has been laid out, in the main, by Mr. Adam Oliver, a landscape gardener of Kalamazoo, Michigan. He is not responsible for the drive from the chemical laboratory to the greenhouse, nor for the drives near the library building, nor for numerous new drives in the vicinity of more recent buildings, nor for sundry minor changes made by successive professors having the campus in charge. There are in the park no straight rows of buildings or of trees, but its more than thirty buildings, if barns be included in the number, are separated by undulating lawns, shallow ravines, and groups of trees. In one place only the method of grouping trees is departed from, for along the highway, a mile in extent, a double row of elms, one without the fence and one within, forms a double walk along the road.

"The drive from the west entrance ascends a hill, and, leaving a pear, plum and cherry orchard on the left, keeps near the steep river bank on the right. At the top of the hill the drive divides, the left hand road passing by the president's house, a small astronomical observatory, and seven dwelling houses for some of the officers of the College. The right hand drive fol-

lows the winding river bank, passes the apiary on the left and the new botanical laboratory, and crosses a ravine near the wild garden, by a rustic bridge, modeled after one in the New York Central Park. From this place walks and drives diverge to the College Hall, the boarding hall, the greenhouse, the chemical laboratory, the library and museum, and other buildings. Beyond this group of buildings are the farm house, the farm buildings and the carpenter shop; still farther on are the vegetables, the small fruits and the apple orchard, and the bridge that leads to the main part of the farm."

The following description, by the writer, was true from 1880-1900.

"The chief glory of a park or the surroundings of a home are trees and grass, and now on the campus of M. A. C. we have them both in great profusion and luxuriance, and, in addition, the gentle undulations of the land. The area of that portion of 'the state farm,' as some of our older friends still call it, which contains the buildings, consists of about ninety acres, gradually enlarged as new buildings are placed farther out from those that are older. The surface is gently rolling, with the Red Cedar river on the south. The stream was long since deprived of its floodwood, the banks cleared of old logs and rubbish, leaving nearly all the woody growth as nature planted.

"A good many native trees of the original 'oak opening' are still standing where they stood when the wild land was purchased for the use of the College, while large numbers of trees and shrubs, both native and exotic, have been planted. In many places some were removed, as they always should be, if removed at all, before they were spoiled by crowding, while in certain other places groups have been allowed to grow with the branches intermingling. Broad open areas are seen here and there, suitable for play grounds and views of buildings, but every year some favorite tree-tops narrow the openings. Unquestionably the most enduring and valuable trees for planting are those found in our own country, most of which are natives of our own state. We have in the state ninety or more kinds of native trees and two hundred and ten, or more, shrubs, all of which deserve notice for parks of considerable size. One of the attractive features of the campus is the thrifty trees of many kinds, not all sugar maples and American elms, which too often are about the only ones selected as at all suitable for planting.

"A large percentage of the older exotic trees on the campus are failing in one way or another. Most of the Austrian pines and Scotch pines, so often purchased of nurserymen, though only twenty to thirty years old, have become shabby and have been cut down. The white birch of Europe, including the cut-leaved, weeping variety, are dead or dying; European larches are failing; many Norway spruces are past their prime. These trees have had as good a chance as we were able to give them here, in soil and exposure of great variety.

"The grass is frequently mowed and that near the buildings is kept closely cut. There are some two miles of drives and two or more of paths, the latter covered with artificial stone. The fifty or more buildings are nicely distributed, with plenty of room for each. No one claims that our campus is kept as well as those of Hunnewell and of Sargent in Massachusetts, where wealth and labor without stint have made the details most complete, but we can justly claim the finest campus, all things considered, of any institution of learning in North America.

"Now and then a person viewing our beautiful and extensive grounds deplores the fact, saying that it is a poor example to set our students, none of whom can ever hope to possess anything approaching it; but most people

think the delightful surroundings cannot help exerting a healthful influence on the life of those who remain here for some time. In a recent address on 'Our City's Breathing Places,' Hon. C. W. Garfield, '70, says: 'A child born into an environment of art, with lovely things to look at from his earliest babyhood, will have his nature materially affected by the beautiful associations and will grow into a 'delicacy of texture,' if I may be allowed the expression, that can be imparted in no other way. Often a single picture upon the wall of the living room directs a career.'

"Any one with the least spark of love for the beautiful in nature, for the first time seeing the campus from the hill in the vicinity of the president's house, or on coming from the east along the highway, invariably makes use of one or more of the following: 'This is grand, nice, inspiring, beautiful, magnificent, a lovely place,' and even one daily accustomed to the view, if he stops to think of it, will be found using some of these exclamations; while there can be no doubt that after an absence of a few weeks, months or years, the former student finds these views one of the chief attractions of the dear old College. The scene varies. In winter, it is the gentle undulations in the surface of the ground, the evergreens and the views of the distant buildings, made clearer by the absence of the broad leaves which fell in autumn; in spring, it is the early flowers of elms, maples, and later the new and tender leaves, the fresh grass, the light new growth of spruce and pine, which contrast with the old; in autumn, it is the contrast of evergreens with the fading lawn, the leaves of the trees changing to brown, red, scarlet and yellow."

At the time of writing (1913) the views are much interrupted and restricted by the great number of trees, some of which would better be removed. The general view from the president's house and from several other spots on the campus is not as good today (1913) as it was fifteen or twenty years ago, when the trees were smaller, and the buildings less hidden from view. This is well illustrated by a photograph taken in 1898 and used in the M. A. C. Record, vol. V, March 29, 1898.

In 1908 Assistant Professor C. P. Halligan referred to another phase of the campus well worth attention—a very undesirable condition now rapidly becoming more and more apparent each year. He referred to the condition of the old lawns, which are rapidly becoming thin and infested with unsightly weeds, for the reason that no means are supplied to furnish barnyard manure of commercial fertilizers.

THE WATER GARDEN.

In the early days of the College, there was a small tamarack swamp north of where the horticultural laboratory was afterward located, and east of where the woman's building now stands. L. R. Taft, Professor of Horticulture, in 1889, scraped out considerable muck, leaving a depression with graceful, wavy outlines and an island to which led rustic foot bridges. On the island and outside the pond, were planted quantities of shrubbery and perennials, and inside were planted water lilies and other aquatics. In its prime this seemed a pronounced success, but later in dry weather, the water leaked out and to pump in a supply was too costly. The pond harbored quantities of polly-wogs and some bull-heads and many mosquitoes. Numerous shiny green algae disfigured the surface. In later years, during the winter when the pond was nearly dry, Professor U. P. Hedrick took out more muck, spreading it on the thin places of the lawn. This did not help

matters so far as the pond was concerned. To new men in charge it seemed best to make changes, so most of the shrubbery was removed from the water garden, quantities of brush, rubbish and surplus dirt from various sources dumped in and portions of the spot were planted to numerous sorts of small evergreens. These paragraphs show how expensive it is to make frequent changes of men in charge of fields, cattle, orchards or campus.

DEER PARK.

In 1898 permission was secured from the Board of Agriculture to fence in the "wood lot" and a part of the arboretum adjoining, for a deer park. The area selected, of about two acres, was enclosed with a Page woven wire fence, seven and one-half feet high, a small pond was excavated and water was provided from the College system. A pair of young elk and three deer, a buck, a doe and a fawn, were procured from Belle Isle Park, Detroit, through the kindness of the park commissioners.

Some years later the elk ran down and killed one of the deer, then the remaining deer and elk were separated by a stout fence; still later the male elk became dangerous and was disposed of, later the females were sold. After a time, for lack of variety of food or for other reasons, most of the deer became thin and sickly. At present, there are but three remaining.

NESTING BOXES FOR BIRDS.

In 1899, chiefly through the influence of Hon. L. Whitney Watkins, '93, then a member of the State Board of Agriculture, fifty dollars was appropriated for placing numerous boxes of neat design among the trees.

Professor Barrows has this to say:

"Forty of the single nesting-boxes, adapted for the use of bluebirds, wrens, nuthatches, chickadees, and white-breasted swallows, were placed in favorable localities and two large bird houses, one with twenty-four compartments and the other with fifty, have been prepared for colonies of swallows or purple martins. These last two houses were finished too late to be occupied this season, but several of the smaller boxes were at once occupied by wrens, and it is hoped that others may be utilized by bluebirds for their second broods. These birds have much to contend with on the campus, bluejays and red squirrels being very numerous and aggressive, while the omnipresent English sparrow is only kept in check by continual shooting and systematic discouragement of other kinds. Fortunately the birds are almost exempt from human interference, the students and other residents of the College giving them every protection possible."

The following, by James Russell Lowell, is "so well put" and, to some extent, applicable to the division of authority at M. A. C. that it finds a place in this history. It is taken from the Harvard Graduate's Magazine. The advice may not be needed as far as M. A. C. is concerned but it would be appropriate for some streets in a city not many miles from our campus, and very likely for other portions of our state:

Trees in the College Yard. (Harvard)

"My dear Dr. Hill:—I have been meaning to speak to you for some time about something which I believe you are interested in, as well as myself, and, not having spoken, I make occasion to write this note. Something ought to be done about the trees in the College Yard. That is my thesis and my

corollary is that you are the man to do it. They remind me always of a young author's first volume of poems. There are too many of 'em, and too many of one kind. If they were not planted in such formal rows, they would typify very well John Bull's notion of 'our democracy' where every tree is its neighbor's enemy, and all turn out scrubs in the end, because none can develop fairly. Then there is scarce anything but American elms. I have nothing to say against the tree itself. I have some myself whose trunks I look on as the most precious baggage I am responsible for in the journey of life; but planted as they are in the Yard, there's no chance for one in ten. If our buildings so nobly dispute architectural pre-eminence with cotton mills, perhaps it is all right that the trees should become spindles; but I think Hesiod (who knew something of country matters) was clearly right in his half being better than the whole, and nowhere more so than in the matter of trees. There are two English beeches in the Yard, which would become noble trees if the elms would let 'em alone. As it is, they are in danger of starving. Now, as you are our Gubernetes, I want you to take the elms in hand. We want more variety, more grouping. We want to learn that one fine tree is worth more than any mob of second-rate ones. We want to take a leaf out of Chaucer's book, and understand that in a stately grove every tree must 'stand well from his fellow apart.' A doom hangs over us in the matter of architecture, but if we will only let a tree alone it will build itself with a nobleness of proportion and grace of detail that Glotto himself might have envied. Nor should the pruning, as now, be trusted to men who get all they cut off, and whose whole notion of pruning, accordingly is 'ax and it shall be given unto you.' Do, pray, take this matter into your own hands—for you know how to love a tree—and give us a modern instance of a wise saw. Be remembered among your other good things as the president that planted the groups of evergreens for the wind to dream of the sea in all summer, and for the snowflakes to roost on in winter and believe me (at the end of my sheet though not of my sermon) always cordially yours,

Elmwood, December 8, 1863."

CEMENT WALKS.

In 1892 nearly two miles of nice cement walks were placed in the vicinity of the main buildings. The job was done by the Cleveland Silex Stone Company. From time to time, since then, more paths have been laid down as new buildings have been erected.

LIGHTS FOR THE CAMPUS.

In dark nights, for many years, people carried lanterns in finding their way from one place to another, or took their bearings by the dim lights in the windows of dwellings; a portion of the time the moon was a great help, but, as the Irishman put it, "The moon is very unreliable, and never shows her light when most needed." About 1892, President Clute had large kerosene lamps on about a dozen posts scattered about. In 1895 Professor Woodworth began hanging electric lights to trees and on posts. Since then more lights, in great numbers, have been installed where needed, even to placing some of them in the barns.

COLLEGE BUILDINGS.

For forty years, it was the policy of members of the legislature and Board of Agriculture to construct buildings that were cheap and plain, making

little provision for any increase of students; but since that time a more liberal policy has prevailed.

COLLEGE HALL.

To the northeast of College Hall, just across the path, are two modest old white oaks. Professor Holmes pointed out these trees with the statement that, with uncovered heads, there was a brief religious ceremony as the ground was about to be broken for the foundations of College Hall, in early days known as the "College."

This was the west wing of a building which was to consist of a central portion, with a wing to the east to match the one erected in 1856. This hall is 50x100 feet, three stories high, above a low basement.



College Hall, looking east.

College Hall is the most memorable building ever erected in America for the purpose of agricultural education, because it is the first one erected that has been used ever since. For many years, from 1857 until about 1870, it was the center for all class-room work. The first chemical laboratory was in the north end. About 1885, the writer changed the rostrum of the chapel from the north side to the south. About 1886 President Willits had the middle of the hall, first floor where the stairways are, partitioned off with slide doors opening on the corridor to be used with the chapel; thereby increasing the capacity about one-third in case of necessity. The nice red bricks were hand-made, in the hollow, south of residence No. 2, used by Professor R. C. Carpenter, Vedder and others. The foundation at the southwest corner, in particular, was not well placed, for which reason that portion has kept settling to the extent of about three inches; to make the matter worse, Professor Weil insisted on putting the tunnel in at the south end, instead of the east or the west side, necessitating the putting in of long rods, north and south, east and west, to hold the building together.

The rooms were first heated by stoves for wood, later by a hot air furnace, which, one Sunday, set fire to the basement near the southeast corner, while Elder Weed was under way in his sermon, which was unceremoniously broken up.

The pulpit was made from plans furnished by Doctor M. Miles; the small walnut top piece was made, in person, by Professor Fairchild, who was very handy with tools. Professor G. H. Harrower, with very good taste, about 1884, overhauled the interior of the chapel; about the only thing still remaining of his handiwork is the strip of moulding four feet from the floor. Professor Woodworth placed electric lights overhead in the form of a square. Several different styles of movable benches have been purchased, and recent ones have been rather sort-lived, owing mainly to careless handling, as they were carted to the armory and back as often as once a week during the college year. As an evidence of the treatment of birds on the grounds, I have seen a quail whistling on the east steps of College Hall, deserted in the afternoon while students were at work in fields, gardens, orchards and on the campus. Sometime in the seventies the writer put into the large rooms on the second floor some blackboards of clear pine, the edges matched and glued together. Floors and stairways have been worn, repaired and reworn by the hosts of busy feet for these fifty-seven years. Not many years after the Hall was built, a new style of roof was found necessary, which served to support, for a short time while the State Board of Agriculture was in session, the stewards' democrat wagon, well set up and put together by students during the night. For many years, the damp and dark basement was used as tool rooms for the horticultural department. Then came steam heating and electric lights, when some portions of the basement were turned into temporary classrooms; later the north portion was used as a place for storing and fitting pipes for water and steam, and the south portion, finally about half of it has been occupied by Mr. Groat, who was employed by the students' boarding clubs to purchase various supplies; still later, the chemical department stored supplies in the north half.

Classes occupied rooms in the second story, and during the warm weather, all windows being open, allowing not only a change of air, but permitting the wide diffusion of eloquence of Joe Cotton demonstrating geometry to sophomores. In later years, the southwest corner of the third story was occupied and the overflow of eloquence of Professor King and his juniors was likewise poured over all the central portion of the campus.

This venerable structure has served a variety of purposes. It has been used for classes, debates, organization of societies, church services, Y. M. C. A. activities, political clubs, orations, public speeches, entertainments such as those by Bill Nye and Riley, alumni banquets, occasional dances by students, not to mention class scraps, meetings of associations of farmers and of the city council of East Lansing, etc., etc. The following is from the pen of Henry A. Haigh, '74:

"Mr. A. B. Cook, '93, and his council do well to build strongly on tradition. Tradition fascinates, enchants, inspires, urges to achievements, and it binds with hooks of steel. Great and useful institutions have good, inspiring traditions. And they are good, and great, and useful, quite largely because of their traditions.

"And in this spirit I would urge the preservation of old College Hall, the one remaining monument of the trials and triumphs of long ago. I hope it may never be razed from the commanding spot where it has stood these four and fifty years. I know it occupies a central site on which many may

think should arise the great and magnificent marble palace of learning which will be College Hall of future generations. But I would keep, preserve, strengthen, restore and fondly cherish the old structure forever, in memory of the dear, dead days that are gone. Keep it as a rallying place for the old boys, coming back, weary with wandering and wishing — reminder of happy days gone by.

“Bind up its bruises with bands of steel and masonry, and keep it in loving memory of those devoted and heroic souls whose lives were lavished in the founding and up-building of this first of the plain people’s great practical schools. Keep it with utmost care, as a repository for the mementoes of the progress toward better farming, better mechanics, better applied physics, and better and broader human life.”

THE OLD BOARDING HALL.—“SAINTS’ REST.”

The following is a statement from Dr. R. C. Kedzie:

“This boarding hall was a three-story brick structure, having a parlor, living rooms for the steward, his family and the kitchen help, and a large dining room in which all the students and some of the faculty lived ‘in commons.’ Appliances for cooking with steam were introduced. The rooms in the second and third stories were assigned to the students, four in a room, but only a few students could be accommodated and there was no opportunity for an overflow into farm houses in the neighborhood. The condition of the road between Lansing and the College made it impossible for students to live in the city while they attended classes at the College, hence many students were rejected for want of room, who returned home to spread discouraging reports about the College. The average attendance the first two years was 132, then it dropped the next year to 82, and the year after, to 48. The novelty had worn off, the enthusiasm had died out, and a reaction of a pronounced character had set in.”

This building was erected in 1856 and burned, December 9, 1876. A view of this old hall when new and in the woods can be seen in Chapter one.

The third, and only remaining, very old building erected on the campus was not finished till 1857. It was a brick horse barn, long since used by carpenters as a repair shop.

During 1857, four dwelling houses, long since numbers 4, 5, 6 and 7, for the use of president and professors, were erected. Later each of these was considerably enlarged and otherwise altered, four and six partially destroyed by fire.

A. E. Macomber, a student in '57-'59, says:

“Dwelling No. 4 was first occupied by President Williams; No. 5, by Professor Fisk; No. 6, by Professor Goadby; No. 7, by Professor Abbot.

“During this year, a small wooden farm house, purchased with the land, was rebuilt and prepared for occupancy. It has been moved at least three times, in 1912 had been enlarged and was occupied by the foreman of the horticultural department.”

In his first report, made in April, 1858, President Williams says:

“Several of the students skilled in the use of tools, during last winter, unaided, erected a bridge across the Cedar River.”

Standing south of the old farm house, was the old cattle barn, built in 1862, with its addition to the east. In 1869, it became much frequented by rats.

One of Dr. Miles’ hobbies was to put in grouted floors, deep and well

cemented. This kind of repair was placed under the barn where it stood later while a cement tunnel for the heating plant ran under it 20 feet below. To clear the way for the fire-proof agricultural building, erected in 1909-10, the old barn was moved around and placed at the south end of the dairy barn, where it is used for a cover shed for small cattle and for a storage shed for manure; the east wing of this old barn is now used for a bull barn.

In 1865 a very suitable sheep barn was designed by Dr. Miles and the labor chiefly performed by students. With some minor changes and extended to the south, the barn is still (1913) in existence, serving the same purpose among the group of barns to the southeast.

A barn for the use of the horticultural department was erected in 1868, located southwest of where Williams Hall appeared the next year. After two years a tool shed and seed loft were added. In 1873 they were moved to the east near the vegetable garden, just south of four hospitals since erected.

A dormitory and boarding hall, later named "Williams Hall" in honor of the first President, was built in 1869, and first used in 1870. Mr. Mallory of Ann Arbor was the architect; Edwards & Cooper, of Ypsilanti, the contractors; the cost, \$31,500. The length is 101 feet; the depth, 109 feet; the southern projection, 36 feet; the basement was for a dining hall, in recent years cut up into three dining rooms for as many clubs; the rooms above will accommodate 86 students. A marked defect in the building was discovered later, viz: in not deafening the floors and separating into wards after the manner of new Wells Hall.

A farm house was erected in 1869. It was of brick, two stories high, 33x42 feet. It was occupied by the farm foreman, and the men employed in farm and garden labor. The cottage formerly occupied as a farm house was entirely too small to afford the requisite accommodations.

In 1900, I think, when the site of the farm house was much needed for a dairy building, it was moved about twenty rods to the southeast, where a smaller building once stood, known as the herdsman's house. The brick farm house for some years past and at the present time has been used by the foreman of the farm and his family. Previously, the herdsman's house had been moved to the north and a little east, where it has been occupied by the foreman of the horticultural department. (1913).

THE PIGGERY.

The piggery was designed by Dr. Miles in 1870, members of the senior and junior classes performing the labor, under the Doctor's supervision. This building had a solid grout foundation and stood where the first engineering shops were located; some of the foundation can yet (1913) be seen protruding from the east side. It is 34x80 feet on the ground, with ten pens. In 1889 this structure was moved to the southeast to make room for the first engineering building, and again moved still farther back, in 1907.

THE CHEMICAL LABORATORY.

In 1869, \$10,000 was appropriated for a chemical laboratory, to take the place, and more, of rooms occupied in the north portion of college hall. It was the first laboratory built on the campus and was first occupied in September, 1871. Edwards and Cooper of Ypsilanti were the builders. In 1882 an addition at the south was made, nearly square, designed by Professor W. S. Holdsworth, 1878. Both the original building and the addition were

constructed of white brick. Owing to the moderate height and the flat roof, it was sometimes called the "Chemical Fort."

In the summer of 1911, a second addition was made to the southeast, 54x63 feet, this one built of paving brick; a section, 20x40 feet, connecting the new to the old. The last addition is three stories high and contains a lecture room to seat 250 students, alas too small in the fall of 1913!

In 1913 the first entrance at the north by the street was bricked up and now the main entrance fronts the south.

A horse barn, with an office in the south end, designed by Dr. Miles, was built in 1872 and stood where the front of the large agricultural building appeared in 1810. This second horse barn, 38x100 feet, after moving, was fixed over and used for tools and implements and a wash-room for men.

Small barns were built from time to time, in the rear of dwellings on Faculty Row, as the professors were obliged to keep each a horse previous to the



Chemical Laboratory, Looking West. (1913.)

arrival of trolley cars from Lansing. From time to time a portion of these barns were removed.

The first greenhouse built in 1866, probably by Professor Prentiss, stood where the bath house now stands and was torn down and the plants taken to a second building in 1874, located on a projection near the botanic garden. This second building was erected by Lord & Burnham and the third building now standing (1913) on the same site as the second one, was erected by the same company.

During the year 1874 the president's brick house on the hill was well under way and two dwellings of wood, next east, were completed. The plans of these houses were made by E. E. Myers, the architect of the new State Capitol.

The three houses were completed by Mr. Cooper, of Ypsilanti. The west one of the wooden houses was occupied by Professor R. C. Carpenter and later by Professor H. K. Vedder; while the third house from the west was occupied by Professor A. J. Cook, and next by his successor, Professor W. B. Barrows.

OLD WELLS HALL.

When the old boarding hall burned, December 8, 1876, fortunately the legislature convened in the January following and appropriated \$25,000 for a new dormitory which was afterwards called Wells Hall, for Hon. Hezekiah G. Wells, President of the Board of Agriculture in 1866 and long after. The plans were made by Watkins & Arnold, architects, and built in 1877, by Peale & Miller, of Grand Rapids. Mr. F. C. Miller was a student at the College, 1867-72. In 1889 he was granted the honorary degree of Master of Science.

Professor R. C. Carpenter, '73, built the ice house, 20x30 feet, in 1880; in later years it was enlarged and accidentally burned in the summer of 1906.

THE FIRST BOTANICAL LABORATORY.

This was built in 1880 and stood on the bank of the brook, north of the botanic garden. The building was designed by Watkins & Arnold, and



Residence No. 9. Occupied by the Professor of Horticulture.

erected under their supervision. The contractors were Fuller and Wheeler, of Lansing. The building was situated on the west bank of the ravine, near the main drive and northwest of the greenhouse, to which it was connected by a foot bridge across the ravine. The site is the same as the one previously occupied for some years by the apiary. As seen from the west, it was very conspicuous and added a great deal to the appearance of the grounds. Views from the upper story were among the finest at the College, and included the State Capitol and other portions of the city. It was two stories high, and was modified Gothic in style, being provided with a rose window and two towers.

The building for library, museum, offices of president and secretary, was designed by Messrs. Appleyard and erected in 1881.

Professor Samuel Johnson built the tool-house for farm implements, not far from the sheep barn, 1881. It was 40x90 feet—two stories high—giving us ample accommodations for all of our farm implements. In 1911 and since that time it has served as a blacksmith and carpenter shop for the use of classes in agriculture.

The old brick boiler house, having a square chimney sixty feet high, was designed by Professor R. C. Carpenter and built in 1884 and since that time it has been used for store-rooms, tin shop, etc.

A brick dwelling in Faculty Row, No. 8, was erected in 1884 for Professor Samuel Johnson, later occupied by Professor C. D. Smith and since 1909 occupied by Professor L. R. Taft.

In 1885 the first machine shop and foundry was erected, having been designed by Professor R. C. Carpenter. Portions of the building were used for class rooms.

The veterinary laboratory was erected in 1885; the upper portion, after a while, was used by Dr. Marshall for bacteriology.

In 1885 a low, broad building was built by Fuller & Wheeler, of Lansing, for military drill and to serve also as a gymnasium and for lectures. There was considerable difference of opinion as to where it should be located;



Armory built 1885; much used for lectures and entertainments.

finally it was left to a member of the State Board, by the name of E. W. Rising, who drove the stake for the present location.

The Armory was ready for use in 1886, and pronounced in all reports satisfactory for military purposes, by Lieutenant J. A. Lockwood, the first professor of military sciences and tactics assigned to the College by the United States. The tar and gravel gave forth a disagreeable odor, and when used by mixed audiences for lectures, orations, commencement, etc., dresses were often badly soiled. After a few years an excellent maple floor was a great improvement for all purposes.

For Professor Lewis McLouth, a large dwelling, No. 10, in Faculty Row, was erected in 1885. It was occupied later by Secretary H. G. Reynolds and after him by Secretary A. M. Brown.

ABBOT HALL.

This Hall, named for President Abbot, was designed by the late William Appleyard, of Lansing. It was built in 1888 by Cleveland & Ward, of Flint, and dedicated, with appropriate ceremonies, by Oscar Clute, later president

of the College, on August 11, at the time of commencement and reunions of the alumni.

The building is two stories high, of modified colonial style, the walls made of red brick. It is located not far from the armory and the residence once occupied by President Abbot, during recent years by Dr. Beal, until the autumn of 1910, and later, by Dr. E. A. Bessey. The shape is that of a parallelogram, extending north and south, with an extension on the west side, for kitchen and dining room.

The Hall was occupied for three years by young women at the opening of the Division of Home Economics in September, 1896.

An apartment building, later called "Howard Terrace," with eight suites each for the use of families of assistants, was erected in 1888; in later years portions of this hall have been occupied by young women. In 1914 young women will occupy the entire building.

A horticultural laboratory was designed by Professor L. H. Bailey and erected in 1888. It has long been too small.

In 1888, an iron bridge was built over the Cedar river in the line of the farm lane.

In 1889 the first bath house was built, near the old boiler house—a low wooden structure, into which were stuffed ten bath tubs, and even this was half paid for by the students; it has now become a paint shop.

An agricultural laboratory was designed by Professor R. C. Carpenter and erected in 1889; in 1910 it was turned over to the professor of entomology, who added a small insectory by way of a greenhouse.

A SECOND BOTANICAL LABORATORY.

The most imposing corner-stone ceremonies ever carried out at the College were on the occasion of laying the corner-stone to the second botanical laboratory, in June 22, 1892. (See report of the Secretary of the State Board of Agriculture for that year.)

This building (in 1910) stood in line of other laboratories, and was built in 1892, at a cost of about \$10,000, and was never large enough.

In 1909 there was erected an addition, long much needed, costing about \$15,000.

The extension is 25x50 feet, two stories high, besides the basement and a small greenhouse in the rear, for plant physiology.

A second bath house was erected in 1893-94.

The first hospital, near the highway, was erected in 1894.

DAIRY BARN.

In 1894, Professor Shaw said:

"The institution is fortunate in being possessed of a comparatively new and commodious dairy barn of which the main part is 44x72 feet and the annex, 40x75 feet. The height of the main posts is 22 feet, while those of the annex are 18 feet. The ground floor is so constructed as to provide stalls for about fifty head of milch cows and heifers, also fourteen box stalls for calves and calving cows, and three pens for bulls, as well. A variety of stall fixtures are in use, the object being to examine into the relative merits of each. Probably one of the most commendable features of the structure is the efficient



Abbot Hall, Dormitory.

system of ventilation used, by which the impure air is removed and the fresh cold air admitted without coming in contact with the animals before being tempered by the warm air near the ceiling."

In 1895 a small poultry house (since removed) was erected south of the present boiler house; also a barn some distance east of the present agricultural building was built for use by the experiment station, in which small lots of grains, whether threshed or in the straw, could be kept separate and secure.

The reader must have observed the frequent mention of the need, about 1895, of more rooms for the increasing number of students. Of the numerous devices to bridge over this difficulty, perhaps Professor P. B. Woodworth's plan was unsurpassed. He cleared out a cellar under the north part of



Dairy barn; to extreme right the old cattle barn of '62.

what is now the chemical laboratory, where it was damp and insufficiently lighted, and used it for a portion of a physical laboratory. Above his office and another portion of the first floor, where the ceiling was high, he improvised a second story, or attic, which he "stuffed" with negatives of photographs and numerous other things.

In 1897 a cold storage house was erected by the experiment station, costing \$1,000. This was designed and intended to serve as a model for others to follow. The performance of the house didn't come up to expectations, and was worked over in 1905 by a western man, since which time the results have been satisfactory.

A coal shed was erected in 1899.

THE WOMAN'S BUILDING.

This fine edifice was built of red brick, in 1899-1900, ready for the "coeds" for the opening of the fall term of 1900. The appropriation was \$95,000.

It stands about half way between Howard terrace and the horticultural laboratory. One corner of the building stands towards the highway, thus obscuring the view of parts of the campus. It was set at one edge of a



Cold Storage for Fruit.

tamarack swamp, three to six feet too low, as has since been shown during excessive wet weather.

As originally planned, the building was to be symmetrical with regard to the central entrance; but the sudden rise in the price of materials made it necessary to lop off the north wing, that the appropriations need not run short.

In the cut shown (a cut appears on page 149) a group of evergreens

conceals the spot of the missing wing, possibly reminding the palaeontologist of the reason for representing the *Dinotherium*, an immense extinct animal related to the elephant, as lying down; because no one knew what kind of legs and feet the animal possessed, the fossil bones not having been found.

It contains the offices and private rooms of the dean and of the various women instructors; a suite of four pleasant rooms for work in domestic art, also a room for woodwork; a cooking laboratory, with adjacent small dining room and pantry; large recitation room, gymnasium, music rooms; parlors and reception rooms; large dining room; toilet and bath rooms, laundry, and living rooms for 120 young women.

The building is a favorite one for holding receptions, and for banquets. In the *Wolverine*, prepared by the class of 1911, the editor refers to the great



Forestry Laboratory, originally the First Dairy.

number of rules which govern the machinery of this building. Surveying squads also say that it is harder to survey in the vicinity of the "Coop" than anywhere else on the campus because the local attraction is so very strong.

THE FIRST DAIRY BUILDING.

"The first dairy building is a brick structure of 64x70 feet, two stories high, with basement, the structure covered with slate. It was dedicated at a meeting of the State Dairymen's Association held at the College, February 7, 1901. In the basement are the store rooms, cold storage, cheese curing room, lockers and wash rooms for students. On the first floor was to be found the home dairy room, butter room, cheese room, wash room and testing room. The second floor was given up to class rooms, offices and laboratories. The cost of this building was \$15,000.

The building was constructed mainly through the influence of Professor C. D. Smith, who had formerly been eminently successful in paying off a large mortgage, through the aid of a dairy of his own. The site is between the old agricultural laboratory, on the south, and the botanical laboratory, on the north."

RAILROAD TO THE CAMPUS.

"The Pere Marquette railroad built a track from Trowbridge to the College, a distance of about one and three-fourths miles. The expense to the College was one thousand dollars, and is a very important improvement. The coal for the year, which amounts to nearly three thousand tons, as well as the material for the new buildings, are brought direct to the College campus. It has also proved very valuable in enabling the different railroads to run their excursion trains to the College without having to depend upon street car service."



Cooperative Store and Trolley Depot.

POST OFFICE AND TROLLEY STATION.

This was built in 1902, and later an extension to the south was made for the book store; still later an experiment station building at the east was enlarged and remodeled for the post office, leaving a room on the north portion of the former building for a book store.

THE SECOND BATH HOUSE.

This building, erected in 1902, at a cost of \$18,000, is located directly north of the west end of the Armory. Connection is made with the armory by a corridor, thus affording easy access from the bath house to the small anterooms of the armory. Both the bath house and armory have the same color of brick in their construction, and the general features of the two buildings, in minor details, are the same, so that a harmonious effect is produced. The outside dimensions of the new building are 77 feet by 66 feet, 6 inches, with an elevation of 17 feet to the top of the main cornice and an elevation of 24 feet to the top of the main skylight. The plunge bath is 35 feet by 17 feet, having an average depth of 5 feet, 6 inches.



Postoffice.



Second Bath House.

BACTERIOLOGICAL LABORATORY.

Early in 1903 the bacteriological department moved from the crowded rooms in the veterinary laboratory into new and commodious quarters, built the year previous.

The new building is located a short distance northeast of the botanical laboratory and a short distance southeast of the horticultural laboratory. It is seen to advantage in a view comprehending the line of comparatively new laboratories. The main dimensions are: laboratory proper, $75\frac{1}{2}$ ft. x $58\frac{1}{2}$ ft., bacteriological stable (immediately behind the laboratory and connected with it by a corridor) $42\frac{1}{2}$ ft. x 43 ft., its elevation being 10 ft.

The walls of the building are constructed of red stock brick with white stone trimmings. From basement floor to attic they have a dead air space.



Bacteriology Laboratory.

On the inside they are made of plain white sand brick, the seams being filled, and the whole surface finished with two coats of zinc paint.

The equipment is all of the most modern style. The cost of the building was about \$30,000.

A GREENHOUSE FOR EXPERIMENTING.

A greenhouse for experimenting, 20x20 feet, was placed, in 1904, in front of the horticultural laboratory, as a gift of the Lord and Burnham Company.

About 1889 two greenhouses, since torn down, placed side by side, extending north and south, northwest of the second botanical laboratory, were built by Professor Taft—as an experiment—one heated by hot water, the other by steam, to see which method was preferable.

PLANS FOR HEATING, LIGHTING AND POWER.

Professor C. L. Weil planned the central heating, lighting and power plant. Murray and Ayres, of Saginaw, were the contractors for constructing the tunnel. The power house was built by Hoertz & Son, of Grand Rapids; Russel Wheel and Foundry Company, of Detroit, built the structural steel work, and the College men did the piping for the steam. The tunnel, mostly six feet, six inches high, constructed of concrete, was 4,100 feet long in all and cost ten (\$10) dollars for each running foot. The whole system cost about \$140,000. The building which houses the equipment is located about one hundred feet south of the first veterinary laboratory. From this building, tunnels radiate to all the large buildings on the grounds.

In the tunnels are placed the steam pipes for heating purposes, the electric lighting wires, and the telephone wires. The smokestack is 125 feet high, 6 feet in diameter inside and 10 feet in external diameter at the base. It is built of vitrified hollow blocks. There are four 150 H. P. Scotch marine boilers equipped with the Jones underfeed stokers. There are two 125-kilowatt dynamos. These are duplicates, either one of which is ample to carry the entire load. A smaller 45-kilowatt dynamo carries the day load. A coal shed of 1,800 tons capacity is located back of the boiler house. The absence of smoke from the chimney is very much appreciated by the dwellers on the campus. It was completed in 1904.

BUILDINGS FOR POULTRY.

In 1906 two buildings were erected. One is an incubator house, 18x36 feet; this building was designed with a half basement for carrying on the incubation work and one story above to provide a class room and work room for students. The poultry house is 15x84 feet, with a capacity for handling 175 mature fowls with twenty-five in each breeding pen.

In succeeding years other buildings were added to accommodate 2,000, or more, fowls.

FARM MECHANICS.

For some years agricultural students were taught shop work in the laboratories of the Engineering Division.

In 1906 a department of farm mechanics was added to the Division of Agriculture, Mr. L. J. Smith, a graduate of the engineering department of 1906, in charge. This department furnishes instruction work to regular

agricultural and short course men in blacksmithing and carpentry. A portion of the course in farm mechanics is given in the agricultural building, such as work with engines and power machines and farm machinery in general.

ENGINEERING BUILDING.

The second engineering building completed in June, 1907, was the finest building on the grounds at that time. The material used was stone for the basement story and paving brick above. The interior is mill-proof construction with maple floors and oak finishings. It is 182 by 84 feet in size,



Poultry Yards and Houses.

with an extension on the rear of 47x37 feet. The basement is nearly all above ground and answers splendidly for laboratory purposes. The fifth story, counting the basement as the first, is used mainly for drawing rooms, on account of the excellent lighting made possible by the skylights in the roof. The building contains more than forty laboratories and recitation rooms, besides offices, storage, toilet, and other small rooms. It is occupied by the departments of mechanical, civil and electrical engineering; also for drawing and physics, and was fully occupied from the start. This building is located between Wells Hall and the first, or old, mechanical building, and cost about \$100,000.



Engineering Building.

THE BARN.

The barns, erected during many years, by many different persons, were a miscellaneous lot, not arranged with much system.

In the new re-arrangement of farm buildings, as seen in 1906, Professor Shaw had in mind (1) to save the travel of attendants, (2) to centralize the position of the manure shed, (3) not to scatter too widely the food supplies, (4) for convenience of inspecting the live stock, (5) to protect from fire.

"What was known as the grain barn, across the road from the farm house, was moved south and west, opposite the dairy barn, and joined to the grade herd barn, which was moved back the previous year; these two buildings were converted into a structure 45x150 feet and are used entirely by the grade beef and dairy herds, accommodating in all about one hundred head. The annex to the old beef barn, a structure 25x94 feet, standing close to the agricultural laboratory, was moved due south and placed at right angles to the grade-herd barn. This building has been refitted and now houses the nine bulls owned by the College, which were formerly scattered around in the numerous buildings. The sheep barn, 34x90 feet, was also moved due south and placed west of the grade-herd barn, 150 feet from it. To this has been added 60 feet more, which forms the western boundary of a court, bounded on the south by the bull barn, on the east by the grade-herd barn and on the north by the new horse barn, the northeast corner of which is only a few feet from the piggery as now located. What was known as the experiment station cattle barn has been removed to a point opposite the railroad track from the old engine house, and has been converted into a hospital for the control of diseases as they may break out in the herds and flocks, and also for the handling of diseased animals which may be shipped in for investigation purposes.

SECOND OR NEW WELLS HALL.

The new Wells Hall which takes the place of the one destroyed by fire on February 11, 1905, was ready for occupancy at the opening of the school year in 1907. This building is erected in six compartments or wards, with fire-proof walls between, and with an outside entrance for each. Every floor in each ward contains five rooms and a toilet room, making accommodations in the entire building for 156 students. The attic of each ward is finished in the same manner and will furnish very pleasant quarters for six literary societies. The basement is high and well lighted. It contains a large kitchen with serving rooms, pantries, storage rooms, dining rooms, with a seating capacity for three hundred or more, besides six fine living rooms for the help.

HOSPITALS.

In 1875-1895 it was not very unusual for a student or two to come down with measles or mumps and be followed by large numbers until the disease had literally gone through the College student body of one hundred fifty to three hundred. The writer recalls several distressing instances of this character. How would it be with our attendance of 1,700 students?

From 1909 to the present it has been impossible for such a thing to happen because there are four well-equipped isolation hospitals besides the general hospital used for students ill with non-contagious diseases. We have probably one of the best systems of isolation hospitals in Michigan and these at a moderate cost.



Second or New Wells Hall.



First Hospital.

THE SECOND OR NEW AGRICULTURAL BUILDING. SEE PAGE 136.

The new agricultural building was erected in 1908-09 at a cost of about \$182,000 and is the finest building on the campus. Two years previous, many of the farm barns were removed, rebuilt and enlarged and new ones were erected, thus leaving a clear space at the south end of laboratory row, next south of the first agricultural building erected in 1889, through the efforts of Professor Samuel Johnson.

"In size it is 190 feet long by 86 feet wide, and five stories high, including basement and finished attic. It is constructed of Bedford stone and paving brick, with interior concrete construction, making it fire-proof throughout. In addition to the main building there is a stock judging pavilion, 45x110 feet, one and one-half stories high, extending to the rear. This is so arranged as to admit of dividing it into two separate rooms when necessary and has a gallery along all four sides for the accommodation of visitors.

This building accommodates the work of farm mechanics, meat demonstration, farm machinery, instruction in the use of cement, animal husbandry, agronomy, work in soils, chemistry of the experiment station, a large assembly hall and numerous offices and store rooms.

THE SECOND DAIRY BUILDING.

Built in 1913 facing the south is located on the farm lane east of the agriculture building. The building is 121 feet long by 77 feet wide, two stories above the basement and sub-basement, and made of reinforced concrete; building and fixtures to cost about \$50,000.



Four Detention Hospitals Built in 1909.

CHAPTER XX.

ATTENDANCE AT THE COLLEGE.

No one subject has given those interested in the College more concern, through many years, than that of the attendance of students. We have all heard of the difficulties, especially in the earlier years, with a new form of education. But to some extent other early institutions suffered the same difficulties.

How was it with the State University, which opened for students in September, 1841? There were two professors, each with a salary of \$500, and six students, with ten a year later. In January, 1842, the money ran out, Professors Williams and Whiting remaining without salary; in July a little money was again available. In 1844, the report said, "The fears once entertained have given place to sanguine hope." In 1843 the University enrolled twenty-five students. The bell was one borrowed from the Michigan Central railroad, and was suspended on some rails stuck out of the third-story window of the north college hall. The expense of candles for the early recitations and for chapel exercises was met by the students. The number of students increased each year for seven years, when there were eighty-nine, then decreased to fifty-seven.

The course of study ran like this during a year: 330 recitations in Latin; 630 in Greek; 495 in mathematics; 236 in modern languages; 854 in all other subjects. This was all book work, with the explanation that the first object to be gained was mental discipline; mental furniture was a secondary object. Harvard University was founded in 1636, with a very small endowment; and not until 1841—205 years after opening—did the number of students reach 243 for undergraduates. Even at the time of President Quincy, in 1830, one of the students was only twelve years old, and the average age for entering was about fifteen years.

In 1885 President Abbot, in explaining to the legislature the situation at this College, said:

"Mere departments of universities have few agricultural students. Take Cornell University, and its students are catalogued as follows (register 1873-74, page 164): In Science, 119; Literature, 30; Arts, 25; Agriculture, 7; Architecture, 21; Chemistry, 7; Engineering, 84; Mechanic Arts, 32; Natural History, 6; Optional Studies, 120; resident graduates, 10; total, 461. Seven agricultural students out of 461!

"The University of Vermont and State Agricultural College trustees, in their report for 1873-74, page 12, use this language: 'That young men do not come to us seeking such an education as a preparation for a life upon a farm does not surprise us. The idea that a farmer needs a thorough education, that he can make it serviceable to him as a farmer, that he is entitled to it, and to the social respect and public influence which it confers, it will take a long time to make familiar and operative in the farming community.'

"The President of the University of Minnesota, of which the State Agricultural College is a part (page 29 of report, 1873), reports 267 students and

"So far lands have been selected as follows:

In the Ionia District, for.....	12,319.44
In the Detroit District, for.....	20,491.58
In the Traverse City District, for.....	116,191.69
In the Saginaw District, for.....	444.89
	<hr/>
	149,447.60

Considerable portions of the land selected in Michigan under the direction of Governor Blair were of very poor quality and after fifty years still remained unsold.

The sale of these lands granted by congress, is the source of a permanent fund for the support of the College. The state pays 7% per annum on this fund to the college, in quarterly payments. It also pays over the interest, 7% received on part paid lands, from the purchasers.

Very fortunately for the Agricultural College the state has still (1913) continued to retain the endowment and pay 7% interest, amounting to over seventy thousand (\$70,000) dollars a year.

For many years past the annual report of the secretary of the State Board of Agriculture has contained a convenient and concise table showing the income of the college from all outside sources from the date of its foundation to the time of the last report. A copy of the table appears at the close of this chapter.

ORIGIN OF THE HATCH FUND FOR AIDING EXPERIMENT STATIONS.

In December, 1883, a circular prepared by President S. A. Knapp of the Iowa Agricultural College was circulated with the view of inducing congress to establish national Experiment Stations in connection with the agricultural colleges of various states.

In 1882 a bill substantially the same was introduced to congress by Hon. C. C. Carpenter of Iowa.

"At a meeting of the delegates from several agricultural and mechanical colleges, called by Commissioner Loring, for January, 1883, this bill was perfected, and the following standing committee was appointed by Dr. Loring to have the matter in charge.

President Knapp of Iowa; President Abbot, later President Willits, of Michigan; President Peabody, of Illinois; President Chadburn, of Massachusetts and President Lee, of Mississippi.

In his report for 1887, President Willits refers to efforts made to secure an appropriation of money from congress with which to pay for experiments at each agricultural college:

"The land grant of 1862 was primarily for educational purposes. The importance of experimental work was but incidentally recognized. As years passed the importance of this work became more apparent, and efforts in that line were made, but being subject to the leading purpose of the college, the educational, the efforts were sporadic and unsatisfactory. It was found, moreover, that the experiments were costly, and the funds could not be spared from the current expenses of the college already stocked for educational work. Recognizing these facts it was determined to appeal to Congress to supplement the endowment of 1862, whose leading purpose, as before stated, was instruction, by an annual appropriation of \$15,000 for each college which should be exclusively devoted to experiments in agriculture

and cognate sciences. Efforts had been made in the Forty-eighth, but they failed. It was not till the Forty-ninth Congress that a systematic and successful movement was made. July 8, 1885, a convention of all the agricultural colleges in the United States was held in Washington, and a united effort was made to present the matter before the Forty-ninth Congress to assemble the following December. Being on the committee appointed by that convention, I spent several weeks in Washington in December and January, 1885-6, and ten days last winter. The first section of the bill, as we matured it, was gotten through the committees of both houses, and there it remained for the second session. The chances were slim for its passage amid the overwhelming mass of unfinished legislation and the conflicting interests incident to the wants of a great country. But by dint of hard work it passed the Senate in a mutilated form and went to the House of Representatives, where, near the close of the session, under suspension of the rules, and therefore without chance of amendment, it passed by an overwhelming vote and went to the President, who signed it March 2, 1887."

EXPERIMENT STATION IDEA.

Even before the passage of this, the Hatch Act, the experiment station idea had taken deep root.

"The work of Johnson and his associates in Connecticut, Cook in New Jersey, Hugh in Pennsylvania, Kedzie, Beal and others in Michigan, Hilgard in Mississippi and California, Stockbridge and Goessman in Massachusetts, and many others, was notable long before regular experiment stations were organized.

"The agricultural colleges early realized the importance of investigation as a necessary part of their work, and, as early as ten years after the passage of the land-grant act, these institutions began to agitate, in a convention of delegates, the founding of stations for experimental purposes." (2)

At Michigan Agricultural College experiments by the professors of chemistry, botany, entomology, and later of agriculture began almost with the organization of classes.

In 1863 the plans, execution and results of experiments were reported, and previous to July 1, 1888, forty-two bulletins had been published and distributed before any funds from the Hatch Act were available, to say nothing about large numbers of experiments made and reported previous to the numbered bulletins referred to.

The number of pages of closely condensed matter devoted to experiments at early dates, are as follows:

In 1863, 8 pages; in 1864, 3 pages; in 1865, 5 pages; in 1866, 12 pages; in 1867, 16 pages; in 1868, 107 pages; in 1869, 56 pages and in 1870, 48 pages.

On May 11, 1885, two years before the passage of the Hatch Bill, the Michigan state legislature passed an act authorizing experiment station work, as follows:

"Section 1. *The People of the State of Michigan enact*, That the State Board of Agriculture be, and they are hereby authorized to provide from time to time, in bulletin form, for the dissemination among the people of this State, and through the medium of the public press the results of experiments made in any of the different departments of the Agricultural College, and such other information that they may deem of sufficient importance to require

1889-90 the summer school idea for teachers of science in the public schools was originated, and this has caused a growth in the special student class (not including regular graduate students or students merely irregular in classification) from 28 in 1887 to 55 in 1895. In 1894 the special winter dairy course was organized, and numbered in 1894, 17, and in 1895, 30. If we deduct from each year's total attendance the dairy students, the ladies, the mechanical students, and the special (teacher) students, we get the agricultural students of each year. The figures show increase from '75 to '81; decrease from that time to '85; a large and sudden increase from '85 to '88; then a falling off to '91; and a practically stationary condition from '91 to '95. The highest number of agricultural students was reached in 1888, namely, 232. As, however, no specials are given that year, there is probably some mistake in the figures and it is safer to take, as the highest, the figures of the previous year, 221. The lowest subsequent number is in 1894, 161; and from 1891 to 1895 the range of difference is only 15, with a final number of 167. From these data, we gather that, with temporary gain from '79 to '82 and from '86 to '90, the interest in thorough agricultural education at the College has practically remained stationary since 1876.

"So far then as absolute attendance from the farms is an indication of interest in the present work of the College, after a consideration of all the data, we may safely assume that it has remained stationary during the last twenty years. In comparison, too, with the average growth, our agricultural course makes a bad showing. Statistics of attendance for the same period at the U. of M., the Normal, Albion, Olivet and the M. A. C., show that the growth of the first four schools has been phenomenal, ranging from 80% to 190%.

"By study of this table and the accompanying correspondence it will be found that in only one college does the attendance of male students on a distinctly agricultural course exceed our own; and in most cases it is much below ours. The important conclusion from these facts is that no causes purely local in their range of effect will account for the facts existing elsewhere as well as here, and we may also comfort ourselves somewhat with the other apparent truth that nowhere have these antagonistic forces, whatever they may be, been more successfully met than in our school.

"To sum up the present condition of interest we would say: first, that judging by actual attendance at the College, it seems for the last twenty years to have remained stationary; second, that this stationary condition of interest exists over a wide area of American territory, and some study of foreign schools indicates that Europe might be included also.

"These statements and the talks with the men above spoken of, warrant us in assigning as other causes of the stationary condition of interest in the college: (1) a distrust of the technical features of the college course: 'you are not turning out practical farmers;' 'You are not teaching farmers' sons how to make a business success of farming'—such is the almost uniform opinion expressed in farmers' clubs. 'Farmers feel that you are soaring above them.'

(2) An alleged tendency of education at the college to divert young men from the farm. This opinion has been expressed again and again, and has appeared so often in the newspapers that quotations are not needed. The opinion operates injuriously whether the fact exists or not, but we have examined into the conditions at the college and find that 24 per cent of our living graduates are actually farmers, and 33 per cent are either farmers, or teachers of farming. Put this with the fact that only 11 per cent of our students, on entering, desire to be farmers, and we have important data for

determining the tendency of education at our college. We conclude therefore that, whatever may be said, the influence of the agricultural college is toward the farm, since it more than doubles during the four years, the number actually inclined toward agriculture at entrance.

(3) The depressed condition of agriculture. Potent as have been the factors already enumerated, it seems to your committee that the chief influence in restraining the farmers of the state from securing for their children the benefits of our College has been the present depressed condition of agriculture. Whenever the question has been put to the farmer, 'Why do you not send your son to the College?' no matter what other reason is given, one part of the answer is well nigh universal: 'Times are too hard.' When, however, it is decided to send a son to college your committee finds that the choice of the college is influenced by a lack of faith on the part of the farmer in his own business. The very existence of this comparative poverty among the farmers after years of hard work perhaps has turned the paternal hopes from the farm to the city. Your committee has everywhere been met with the remark, 'I do not want my son to live on the farm and work as hard as I have done and for such poor pay. I want him to be a professional man or merchant and get his money by his wits.' That this idea is widespread is evidenced by the fact that whereas in 1880 the rural population, 1,096,533, was almost exactly double the city population, in 1894 the population of the cities is within 80,000 of equaling that of the rural districts."

Shortly after this report was made there began to appear a decided increase in numbers of students. The following is adapted from the M. A. C. Record of September 22, 1896:

"These few months following the report of the committee until September 14th contained long and anxious days for all those who have been responsible for the various and radical changes adopted as a part of the future policy of the College.

"The College declared for women; the long vacation was to come in summer instead of in the winter; some of the agriculture was to be taught earlier in the course; short winter special courses were agreed upon.

"Finally, the 14th of September, 1896, came. The chapel bell rang, and—the chapel was filled to overflowing. We have not for years seen such an attendance on the opening night. We felt that our fears were at an end, and that the justice of our conclusions was established.

"On the fourth day after the opening of the term, thirty-two girls are enrolled in the women's course.

"The number of male students matriculating during the first four days of this term is largely in excess of the whole number matriculated during the fall term of 1895, and if the ratio between the matriculates of the first four days of '85 and those of the first four of '86 holds throughout the term we shall enroll this term the largest freshman class of male students during many years. This we take as demonstrating two things, viz., that the change of vacation from winter to summer is meeting the wants of a larger class of people than that accommodated by the old program; and that our patrons approve of the co-education of girls and boys."

The distribution of large numbers of the M. A. C. Record, started in '96 by the faculty and the vigorous efforts of our field agent, K. L. Butterfield, must have helped to draw students to the College.

In 1900, at the opening of the college year, and from that time forward, expressions like the following are common:

"The college year opens with the largest attendance of students in the

history of the College. All the signs indicate that M. A. C. is entering upon one of her most successful years."

"The number of new students matriculating, up to Saturday night of the first week, September 22, is 498. The freshman class numbers 206, of which 65 are agriculturals, 88 are mechanicals, and 53 are women. More students are in attendance this term than ever before in the history of the College. It is very gratifying to note that a much larger proportion than usual belong to the higher classes."

"All the colleges and universities of the land are reporting a most gratifying increase in attendance this fall. Especially is this true of the technical and professional schools where definite and immediate preparation for the work of life is the end sought. These facts furnish the most convincing proof that the appreciation of the necessity of higher education is by no means losing its hold on the American people but is more and more coming to be felt as a necessity of our modern life. The uneducated and untrained mind is simply incapable of contending successfully with the forces of the external world. He is bound to sink in defeat before them. Only the educated and trained kind is safe, and in continually increasing numbers our young men and women are fitting themselves more accurately for successful adjustment to their coming environment."

In his report for 1902, President Snyder states:

"A greater number of students have been in attendance than ever before. During the earlier history of the College, many students entered who had no interest in the technical training given. They desired a general education and entered this institution because they could earn a large part of their expenses. In later years very few students enroll who do not enter the institution because of a desire to receive the technical training given here. The spirit of the class room is thoroughly in harmony with the purposes of the College. The awakened interest in technical training both among farmers and mechanics indicates that in the future the equipment of the College must expand rapidly to meet the demands made by the increase in attendance."

It is a matter of common observation concerning colleges and universities that the number of students in any department or school varies with the apparent demand. When beef, pork, fruit and potatoes bear a good price and the best of farmers are feeling pretty well, there are more likely to be students ready to try the agricultural course. When there is a brisk demand for electrical engineers at good wages, the course in electrical engineering is well filled, but if there is a little depression in the business and places are mostly filled, students in the course dwindle in number and seek something else which just then seems to promise better and so it is with other courses."

During the College year closing June, 1905, the President reported:

"The prosperity of the College during the past few years shows no signs of abating. The enrollment during the year passed the one thousand mark. This is an increase of about one hundred over the preceding year."

"The trend of education in this state seems to be strongly toward the type fostered by this institution. This would indicate that the growth of the College in the future would depend very largely upon the liberality of the state in providing teachers and equipment. If the state will furnish equal opportunities this institution will be required to do a great work in the future."

It is well to remember the following, in the report of an expert appointed by Governor Foss, in 1911, to examine the Massachusetts Agricultural College:

"The prime function of a college is to teach, but the service of the college

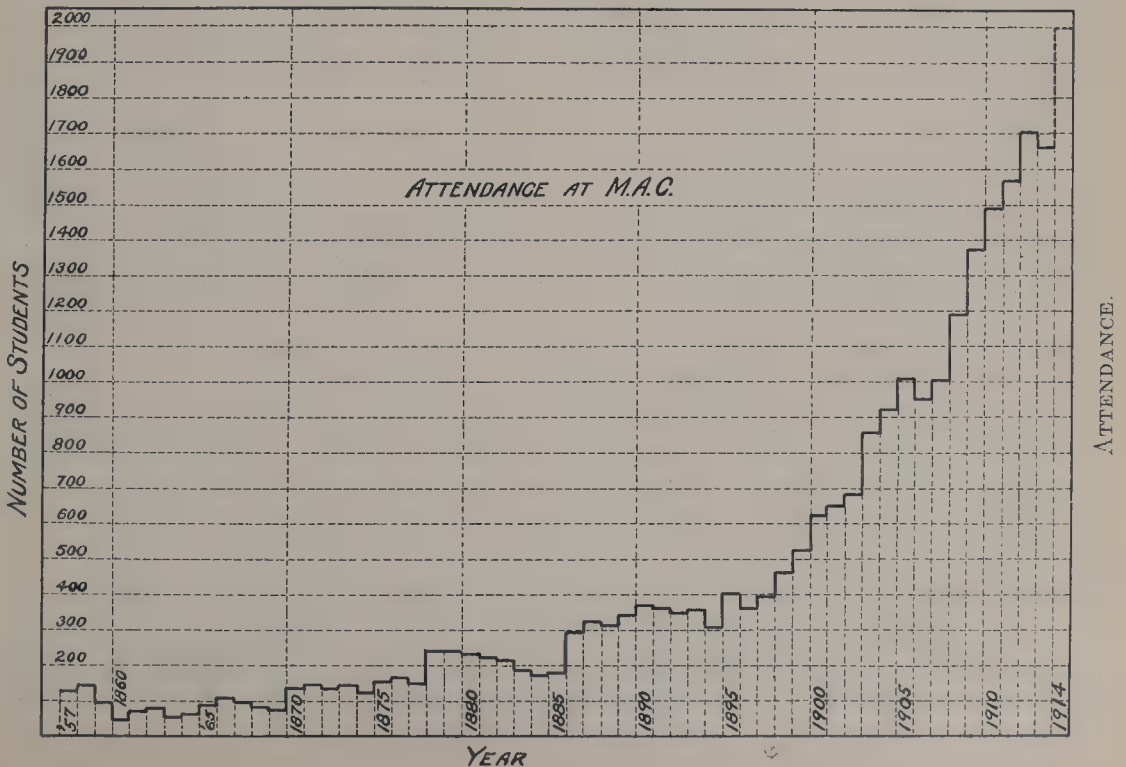
to the state should not be measured wholly by the number of students on the campus. Its total service to the commonwealth should include the state-wide distribution of information about agricultural and country life."

Farmers have been asked to stand up and tell why more of their sons were not enrolled among the students. Few have thought to observe that the fact of small numbers was fortunate for the College, because it started with a very meager equipment and little experience. The faculty would have been swamped with one thousand students, or even with five hundred, in the early days.

Why not still more students in our agricultural course? (a) Because we have to contend with one of the largest State Universities in the United States, giving many courses to satisfy all grades of students. (b) Because daily manual labor was for a long time compulsory. (c) Because of the fluctuations incident on frequent changes of members of the faculty and pinched appropriations by the state. (d) Because there are very few elective studies. (e) Because for a long time some of the papers and some persons have persistently misrepresented the College in many ways and no member of the Board or faculty having denied these statements, editors and other persons doubtless begin to believe they are telling the truth and to a great extent, the general public believed these misstatements. (f) Most teachers of the state are ambitious to send their best students to the Normal or the University where they themselves have been educated and both of these institutions are large and both are older than M. A. C. There are several other good reasons not here enumerated.

In more recent times large numbers of discoveries have been made and progress has been rapid. The teaching force has become much more competent and able to make a course of study more profitable.

Let fault-finders stop a minute to think that the entire worth of the College to the farmer cannot by any means be gauged by the number of students in attendance.



SUMMARY OF STUDENTS ATTENDING THE COLLEGE.

Years.	Agricultural Division.	Graduates of Agricultural Division.	Engineering Division.	Graduates of Engineering Division.	Division of Home Economics.	Graduates of Division of Home Economics.	Forestry Department.	Graduates of Forestry Department.	Division of Veterinary Medicine.	Graduates of Veterinary Medicine.	Special and Preparatory Students.	Short Special Courses.	Resident Graduates.	Totals.
1857.	123													123
1858.	140													140
1859.	98													98
1860.	49													49
1861.	37	7									29			66
1862.	40	5									29			69
1863.	28										32			60
1864.	19	5									43			62
1865.	21										67			88
1866.	47	2									61			108
1867.	66	5									31			97
1868.	82	10												82
1869.	79	10												79
1870.	83	12									49			132
1871.	128	12									12		1	141
1872.	113	5									13		5	131
1873.	115	15									25		3	143
1874.	106	21									11		4	121
1875.	140	15									11		5	156
1876.	149	17									10		5	164
1877.	140	15									13		1	154
1878.	207	30									31		1	239
*1879.	19													
1880.	183	6									42		7	232
1881.	209	33									12			221
1882.	197	28									17		2	216
1883.	177	30									5		3	185
1884.	157	30									12		2	171
1885.	150	30									19		4	173
1886.	225	27	35								24		11	295
1887.	231	22	58								23		11	323
1888.	239	32	61								12			312
1889.	207	37	91	6							23		19	340
1890.	205	23	111	9							23		30	369
1891.	172	28	123	6							28		37	360
1892.	179	21	110	5							29		27	345
1893.	165	38	119	7							36		35	355
1894.	140	15	112	7							32	17	7	308
1895.	172	26	113	6							54	30	37	406
1896.	130	22	98	6	9						88		31	356
1897.	139	21	104	6	33	1					66	45	11	398
1898.	168	19	134	4	58	4					39	65		464
1899.	195	19	161	7	73	3					31	69		528
1900.	186	11	226	8	84	4					56	68	7	627
1901.	200	22	117	11	96	5					64	90	8	652
1902.	183	28	176	19	138	11					102	94	7	689
1903.	127	28	214	26	83	6					282	148	9	854
1904.	148	27	236	19	94	9					304	137	4	917
1905.	166	21	285	26	112	24					281	162	8	1,009
1906.	150	14	291	42	92	16	16	1			219	194	3	950
1907.	181	36	294	44	96	15	11	5			216	203	5	1,001
1908.	198	22	376	47	100	13	26	3			280	206	6	1,191
1909.	260	29	402	49	149	14	24	6			302	233	5	1,370
1910.	313	24	414	40	185	15	34	11			261	287	8	1,494
1911.	347	33	436	52	263	24	66	16	5		185	321	7	1,568
1912.	429	65	400	54	222	27	56	5	15		192	393	9	1,702
1913.	538	66	434	46	272	30	53	14	24	1	181	326	4	1,643
1914.														2,010

*In 1879 the college year opened, with new students as usual, in February, continuing for two terms only, closing August 26. Then the time for beginning the college year was changed from February to September and the names of students for five terms instead of three were included in the catalogue for 1880, and no catalogue was printed in 1879.

The records do not show the names of students in forestry and veterinary science until the junior year. Previous to that year, they are recorded in the list as agricultural students, hence the list of agricultural students in the total attendance is enlarged at the expense of forestry and veterinary.

CHAPTER XXI.

ENDOWMENTS AND APPROPRIATIONS.

The support of the College has come from three great sources: First, from various grants from the federal government; second, from appropriations by the state legislature and from a general tax on the property of the state; third, from the student fees and the sale of products of the farm.

FEDERAL ENDOWMENTS.

The most notable of the federal endowments was the Morrill Act, or national land grant for the support of a college in each state, where agriculture, the mechanic arts and sciences related thereto should be the leading features in the course of study. This act, approved July 2, 1862, donated to each state public lands to the amount of 30,000 acres for each of the senators and representatives in Congress, according to the census of 1860, for the "endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts."

In 1863, the legislature accepted a grant, and bestowed it upon the Agricultural College, which accordingly received about 240,000 acres of land. With this endowment the officers of the Michigan Agricultural College at that time believed that at no distant day the institution would be self-sustaining.

In 1907, Dean E. Davenport of Illinois, in a paper read at a meeting of the Society for the Promotion of Agricultural Science, gave evidence to show that Professor Jonathan B. Turner of Jacksonville, Illinois, was the man who first suggested the land-grant bill. As early as 1833 he became interested in the education of farmers, mechanics and merchants and traveled and lectured in Illinois to awaken an interest in education for these common people. He was well acquainted with President Lincoln and many other able men. Two years before Morrill was elected to Congress, Professor Turner induced the legislature of Illinois to petition Congress for a grant of public lands, 50,000 acres to each state in the union, for the support of an industrial university in each state. A letter from Senator Trumbull in October, 1857, endorsed the plan, and advised that it be presented to Congress by a man from an eastern state. Professor Turner was in correspondence with Senator Morrill and many others.

In November, 1910, Edmund J. James, President of the University of Illinois, published a bulletin, Volume 4, No. 1, in which it is proved that Jonathan B. Turner was the real father of the Morrill Act of July 2, 1862. President James speaks of this act of congress for promoting the liberal education of the industrial classes as the greatest endowment of higher education ever made at any one time by the act of any legislature. "It is not too much to claim," he says, "that the federal land grant of 1862 marks the beginning of one of the most comprehensive, far-reaching, and one

might almost say, grandiose, schemes for the endowment of higher education ever adopted by any civilized nation."

We have seen that the legislature of Michigan petitioned congress on April 2, 1850, for a donation of 350,000 acres of public lands for the establishment of an agricultural college in the state, but the legislature of Illinois on February 8, 1853, was the first to petition congress to grant lands to each state for the support of a more liberal and practical education of our industrial classes and their teachers.

Professor Turner gave much attention toward founding in Illinois a state industrial university. To aid in this, there were four conventions extensively advertised and well attended in which Professor Turner was the leading spirit. The first was held at Granville, November 18, 1851, and reports of the proceedings were printed in various parts of the United States.

There seems, then, to be little doubt that Illinois was the first state to commit itself formally through the action of the legislature to the advocacy of this measure, and that the farmers of Illinois, under the leadership of Jonathan B. Turner of Jacksonville, were the first to formulate this plan, at Springfield, June 8, 1852, in the definite shape in which in all essential particulars it was finally accepted a decade later and found legal expression in the land-grant act of July 2, 1862. The very language of the plan for Illinois was much the same as that in the bill introduced by Mr. Morrill in congress Dec. 14, 1857.

A pamphlet published by Professor Turner in 1853 and entitled "Industrial Universities for the People," was widely distributed and quoted. In this he says in part:

"The whole history of education, both in protestant and catholic countries, shows that we must begin with the higher institutions, or we can never succeed with the lower; for the plain reason, that neither knowledge nor water will run up hill. No people ever had, or ever can have, any system of common schools and lower seminaries worth anything, until they first founded their higher institutions and fountains of knowledge from which they could draw their supply of teachers, etc., for the lower. We would begin, therefore, where all experience and common sense show that we must begin, if we could effect anything worthy of an effort." (13)

Professor Turner gives a plan for an industrial university; it is exact and comprehensive; a remarkable production for a classical scholar and one who had taught for fifteen years in a small classical college conducted on the old plan. Professor Turner suggests:

"At some convenient season of the year, the commencement, or annual fair of the university, should be holden through a succession of days. On this occasion the doors of the institution, with all its treasures of art and resources of knowledge, should be thrown open to all classes, and as many other objects of agricultural or mechanical skill, gathered from the whole state, as possible, and presented by the people for inspection and premium on the best of each kind; judgment being rendered, in all cases, by a committee wholly disconnected with the institution. On this occasion, all the professors, and as many of the pupils as are sufficiently advanced, should be constantly engaged in lecturing and explaining the divers objects and interests of their departments. In short, this occasion should be made the great annual gala-day of the institution, and of all the industrial classes, and of all other classes in the state, for the exhibition of their products and their skill and for the vigorous and powerful diffusion of practical knowledge

in their ranks, and a more intense enthusiasm in its extension and pursuit.” (13)

This plan of Professor Turner made in 1852 anticipates in a measure what a half century later takes place annually at M. A. C. in the form of excursions in August, and the Round-up Institute in March held at the College. Professor Turner was a radical, as is shown by some of his remarks: “What a monstrosity was that which some years since took little boys and girls, not even seven years old, out of God’s clear sunshine, away from the birds and flowers, the breezes and the trees, and set them, for six hours of the day, bolt upright on a wooden bench, to look at letters and triangles made of cotton rags and lampblack!!—and all this, only to educate them!!!

“It may do for the man of books to plunge at once amid the catacombs of buried nations and languages, to soar to Greece, or Rome, or Nova-Zemba, Kamtschatka, and the fixed stars, before he knows how to plant his own beans, or harness his own horse, or can tell whether the functions of his own body are performed by heart, stomach, and lungs, or with a gizzard and gills.

“But for the man of work thus to bolt away at once from himself and all his pursuits in after life, contravenes the plainest principles of nature and common sense. No wonder such educators have ever deemed the liberal culture of the industrial classes an impossibility; for they have never contrived nor even conceived of any other way of educating them except that by which they are rendered totally unfit for their several callings in after life.” (13)

It is altogether likely that the reports of these energetic movements of Professor Turner so extensively copied all over the country served to encourage the farmers of Michigan and in a manner served as a model for them to follow.

In our second chapter,—President Williams’ Administration,—and in the biography of President Williams, references are made to his valiant and efficient service rendered in behalf of the passage of the first national land-grant bill.

In his report for 1864, Samuel S. Lacey reports to Governor Austin Blair:

“Sir—I have the honor to submit my report, as agent of the Board, for the selection of the lands granted the state, by act of congress, approved July 2d, 1862, for the endowment of colleges and for the benefit of agriculture and the mechanic arts.

“The lands, thus far, have been selected with reference to their intrinsic value, and early availability for the purposes of the grant, and have consequently been made adjacent to the settled parts of the state, and within reach of some of the most important lines of state roads now in process of construction.

“The first relates to the selection of lands of the double minimum price, which is permitted, provided that they shall be computed to the states at the maximum price, and the number of acres proportionally diminished.

“The second restricts selections to quantities not less than one quarter section, but every such selection must be charged to the state as a quarter section, or 160 acres.

“Could selections have been made of quantities less than a quarter section, or of adjoining eighty acre tracts, upon different sections or different quarters of the same section, the labor would have been much less, and the land more uniform in quality.

"So far lands have been selected as follows:

In the Ionia District, for.....	12,319.44
In the Detroit District, for.....	20,491.58
In the Traverse City District, for.....	116,191.69
In the Saginaw District, for.....	444.89
	<hr/>
	149,447.60

Considerable portions of the land selected in Michigan under the direction of Governor Blair were of very poor quality and after fifty years still remained unsold.

The sale of these lands granted by congress, is the source of a permanent fund for the support of the College. The state pays 7% per annum on this fund to the college, in quarterly payments. It also pays over the interest, 7% received on part paid lands, from the purchasers.

Very fortunately for the Agricultural College the state has still (1913) continued to retain the endowment and pay 7% interest, amounting to over seventy thousand (\$70,000) dollars a year.

For many years past the annual report of the secretary of the State Board of Agriculture has contained a convenient and concise table showing the income of the college from all outside sources from the date of its foundation to the time of the last report. A copy of the table appears at the close of this chapter.

ORIGIN OF THE HATCH FUND FOR AIDING EXPERIMENT STATIONS.

In December, 1883, a circular prepared by President S. A. Knapp of the Iowa Agricultural College was circulated with the view of inducing congress to establish national Experiment Stations in connection with the agricultural colleges of various states.

In 1882 a bill substantially the same was introduced to congress by Hon. C. C. Carpenter of Iowa.

"At a meeting of the delegates from several agricultural and mechanical colleges, called by Commissioner Loring, for January, 1883, this bill was perfected, and the following standing committee was appointed by Dr. Loring to have the matter in charge.

President Knapp of Iowa; President Abbot, later President Willits, of Michigan; President Peabody, of Illinois; President Chadburn, of Massachusetts and President Lee, of Mississippi.

In his report for 1887, President Willits refers to efforts made to secure an appropriation of money from congress with which to pay for experiments at each agricultural college:

"The land grant of 1862 was primarily for educational purposes. The importance of experimental work was but incidentally recognized. As years passed the importance of this work became more apparent, and efforts in that line were made, but being subject to the leading purpose of the college, the educational, the efforts were sporadic and unsatisfactory. It was found, moreover, that the experiments were costly, and the funds could not be spared from the current expenses of the college already stocked for educational work. Recognizing these facts it was determined to appeal to Congress to supplement the endowment of 1862, whose leading purpose, as before stated, was instruction, by an annual appropriation of \$15,000 for each college which should be exclusively devoted to experiments in agriculture

and cognate sciences. Efforts had been made in the Forty-eighth, but they failed. It was not till the Forty-ninth Congress that a systematic and successful movement was made. July 8, 1885, a convention of all the agricultural colleges in the United States was held in Washington, and a united effort was made to present the matter before the Forty-ninth Congress to assemble the following December. Being on the committee appointed by that convention, I spent several weeks in Washington in December and January, 1885-6, and ten days last winter. The first section of the bill, as we matured it, was gotten through the committees of both houses, and there it remained for the second session. The chances were slim for its passage amid the overwhelming mass of unfinished legislation and the conflicting interests incident to the wants of a great country. But by dint of hard work it passed the Senate in a mutilated form and went to the House of Representatives, where, near the close of the session, under suspension of the rules, and therefore without chance of amendment, it passed by an overwhelming vote and went to the President, who signed it March 2, 1887."

EXPERIMENT STATION IDEA.

Even before the passage of this, the Hatch Act, the experiment station idea had taken deep root.

"The work of Johnson and his associates in Connecticut, Cook in New Jersey, Hugh in Pennsylvania, Kedzie, Beal and others in Michigan, Hilgard in Mississippi and California, Stockbridge and Goessman in Massachusetts, and many others, was notable long before regular experiment stations were organized.

"The agricultural colleges early realized the importance of investigation as a necessary part of their work, and, as early as ten years after the passage of the land-grant act, these institutions began to agitate, in a convention of delegates, the founding of stations for experimental purposes." (2)

At Michigan Agricultural College experiments by the professors of chemistry, botany, entomology, and later of agriculture began almost with the organization of classes.

In 1863 the plans, execution and results of experiments were reported, and previous to July 1, 1888, forty-two bulletins had been published and distributed before any funds from the Hatch Act were available, to say nothing about large numbers of experiments made and reported previous to the numbered bulletins referred to.

The number of pages of closely condensed matter devoted to experiments at early dates, are as follows:

In 1863, 8 pages; in 1864, 3 pages; in 1865, 5 pages; in 1866, 12 pages; in 1867, 16 pages; in 1868, 107 pages; in 1869, 56 pages and in 1870, 48 pages.

On May 11, 1885, two years before the passage of the Hatch Bill, the Michigan state legislature passed an act authorizing experiment station work, as follows:

"Section 1. *The People of the State of Michigan enact*, That the State Board of Agriculture be, and they are hereby authorized to provide from time to time, in bulletin form, for the dissemination among the people of this State, and through the medium of the public press the results of experiments made in any of the different departments of the Agricultural College, and such other information that they may deem of sufficient importance to require

it to come to the immediate knowledge of the farmers and horticulturists of the State.

"Section 2. The several professors of chemistry, zoology, botany, agriculture, horticulture, and veterinary science, shall at least twice in each year, not excluding the president and other professors, prepare for publication an article embracing such facts as they may deem of public importance, a copy of which shall be simultaneously sent to each and every newspaper in the State, and to such persons as the State Board of Agriculture may think proper, said professors to arrange so that at least one of said articles shall be sent out as above provided the first week of each and every month in each and every year."

THE AGRICULTURAL EXPERIMENT STATION OF MICHIGAN.

On the 26th of January, 1888, Michigan Agricultural College organized its experiment station under the Hatch law and had available \$15,000 to be spent by July 1, 1888, and a like amount was to become available each succeeding year. President Willits was made Director; H. G. Reynolds, Secretary and Treasurer. Each of six professors was to receive \$600 per year for one-third of his services; viz., Dr. R. C. Kedzie, Chemist; A. J. Cook, Zoologist; W. J. Beal, Botanist; Samuel Johnson, Agriculturist; E. A. A. Grange, Veterinarian; L. H. Bailey, Horticulturist.

The experiment stations in the various states were to be in connection with the state agricultural colleges as departments. As the field of agriculture and the sciences bearing on it is a very extensive one, \$15,000 a year in Michigan was not sufficient to cover it all and necessarily selections must be made limiting the work to certain lines. Each of these six professors specified what he desired to undertake and their selections are to be found on pages 141, 142, 143 of the report of the Michigan Board of Agriculture for 1888. It is not worth while to copy them here, for they were soon modified, some of them abandoned, others added, as was to be expected with frequent change of directors and of some of the experimentors. The appropriation of money certain to be available for years to come for the advancement of agriculture was of great moment and in advance of all other nations of the earth.

Since the beginning of the experiment station in 1888, when the congressional appropriation known as the Hatch Fund became available, Michigan has uniformly followed the plan of selecting a director having numerous other duties on his hands. He has either been president of the college, or a professor spending much time in the class room and hampered by numerous other duties. Stations in some other states follow the same plan but many of the best follow the plan of employing a director to give all or nearly all of his time to his work.

After the Experiment Station, supported by the United States government, had been going from 1888 to 1892 the State Board voted that all of the work should be conducted in the future by but two departments, the agricultural and horticultural instead of by six departments as before. The other departments, chemistry, entomology, botany and veterinary might be called on occasionally for assistance. No particular reasons were given for the change.

It will be remembered that when the experiment station was organized, President Willits, after consulting all interested, wished to begin with the

six professors, each giving one-third of his time to conducting experiments and receiving one-third of his salary from experiment station funds.

When questioned by an instructor, Mr. Henry Chamberlain, a member of the Board, admitted that most of the best bulletins heretofore had been put out by the chemist, the botanist, the entomologist and the veterinarian; now they were going to force bulletins to come from the farm and the garden by reducing the proportion of service given by other four men to one-sixth instead of one-third of their time. Fortunately, the results of this motion were of short duration. Dr. Beal was so displeased with the act that he urged the Board to relieve him entirely from station work, which they finally agreed to do; the other three continued to act.

Besides these experiments made at the college, sub-stations were established in 1888 as follows:

In the same year, 1888, a sub-station of fifteen acres was established at South Haven in the fruit-belt, the chief object of which was to test the varieties of fruits, especially those not likely to be hardy in many other portions of the state. From 1889 until the time of his death, the director was most fortunate in securing the services of the veteran horticulturist, the Hon. T. T. Lyon as manager of the sub-station.

In 1899 the legislature appropriated \$117,000 including \$83,000 for the Woman's Building and \$15,000 for a Dairy building, an amount which was considered generous for that period.

The State of Michigan has in recent years supplemented the funds received from the government by establishing and supporting two sub-stations, one at Chatham in the northern peninsula and one at South Haven. The expense of publishing the station bulletins is annually about \$4,000 and is borne by the College.

The National Congress in 1905 granted additional aid to the state experiment stations. The Adams act gave each station \$5,000 for the year 1906, with an increase of \$2,000 each year for five years. At the end of that time, and thereafter, the appropriation by the general government for each experiment station became \$30,000 per annum.

The one who deserves especial credit for the latter act was the late Hon. H. C. Adams, a member of congress from Wisconsin. To him more than to any other man, even more than to all other men not officially concerned in its passage, is due the credit. President Snyder says: "As a member of the executive committee of the National Association of Agricultural Colleges and Experiment Stations, I have visited Washington many times with other members of the committee during the past three years in behalf of this legislation. We always found Mr. Adams at the helm ready to confer and advise. He was a man of the most remarkable energy, sane and sensible at all times. He threw all his energy and even his very life into the passage of this act. His untimely death at the Auditorium Hotel, Chicago, on July 9th, 1905 (?) brought universal sorrow to all friends of scientific and practical agriculture."

A second Morrill act passed in 1890 gives each year to each land grant college \$25,000.

The so-called Nelson Act of March 4, 1907, provided each state in the union a sum of five thousand (\$5,000) dollars per annum, increased each year for four years by an additional sum of five thousand dollars, and thereafter by the second Morrill act and the Nelson act, an annual sum of fifty thousand dollars was appropriated for the more complete endowment and maintenance of agricultural colleges established under the act of 1862.

Thus the sum of eighty thousand (\$80,000) dollars per year is appropriated by the federal government to each state in the union, in addition to the proceeds of the original land-grant of 1862, for the endowment of these institutions which have been created in different states.

The present prospects are that these acts of congress are only a beginning of what is to follow in the liberal appropriations for the support of the newer education in all the states.

APPROPRIATIONS BY THE LEGISLATURE.

While T. C. Abbot was president of the College, expenses were kept small and estimates sent to the legislature were low.

Note President Abbot concerning estimates for 1872:

"The estimates are submitted to the good sense of the legislature. They are put as low as it was known how to make them. Certainly there was no thought of putting in a margin to be cut off. The legislature has not cut down the appropriation for current expenses below what the Board of Agriculture has asked, since 1863, when the reduction was \$1,000. Nothing not absolutely necessary has been asked for but put off to the time when the endowment fund can be used for them."

The president was sure to state the amount absolutely needed and what it was wanted for. He was apt in stating what other colleges were asking and never failed to tell of the good work of our students.

Year after year the demand for appropriations grew and the legislature responded more or less willingly.

THE SPECIAL MILL TAX.

All friends of the College were very much elated over the kind treatment received at the hands of the legislature in 1901. The appropriation bill of that year granted to the college a tax of one-tenth of a mill on all the taxable property of the state, provided that not more than one hundred thousand dollars should be paid to the College from this fund during any one year.

How did the College authorities in 1901 happen to think to secure a mill tax? They knew the University had tried the plan and found it worked well. When Claudius B. Grant was regent of the University in 1873 his suggestion to secure a mill tax was approved by President Angell and the regents, and they persuaded the legislature to give them the proceeds of the one-twentieth of a mill tax on all the taxable property of the state, later three times increased.

Grant was a member of the class of '59, a classmate and chum of the writer. In the words of President Angell, "this established a most useful precedent."

"It proved to be a far better plan than the voting of special appropriations for a number of objects. It spared the legislature the trouble of scrutinizing a large number of specific requests. It also enabled the University authorities to use the funds granted them more effectively and economically."

In great emergencies the Agricultural College as well as the University solicits special appropriations in addition to the mill tax. For example, in 1905 in addition to our regular appropriation of one hundred thousand dollars annually from the state, the legislature made the following appropriation:

\$9,000 for the Northern Peninsula Experiment Station,
\$20,000 for the experimental work in live stock,

\$15,000 for a new barn and moving and repairing old ones,
\$55,000 for new dormitory.

\$157,810 was appropriated by the removal for two years of the limit on the one-tenth mill tax and was used for erecting and equipping an additional building.

MONEY, HOW DOLED OUT.

From 1857 to 1875 and some years later, money was appropriated in lump sums to be divided from time to time by the Board and faculty; then it was divided for each six months among departments, according to estimates previously made, and what remained at the close of each six months reverted to the secretary's office. Later an unused balance was cumulative and kept on hand as a partial supply for the next six months. All moneys received for animals and produce was promptly turned into the treasury. For a time the several amounts to be used by the heads of the different departments were made public in the *Speculum*. More recently each head of department is informed by letter how much is at his disposal; even then to draw money as needed, a requisition is required signed by the president and secretary and their authorized clerks.

Thinking to economize, and possibly for other reasons, in 1909 the State Board selected a purchasing agent.

The auditor general, following the plan of the national government requires a duplicate receipt in advance before the payment of every bill. Because of this plan, the College is unable to purchase small items directly from the United States. In such cases the cooperative store makes purchases and then sells to the College.

Secretary A. M. Brown has kindly furnished the remaining portion of this Chapter.

"To any one who will examine Table No. 7 of the Report of the Secretary of the State Board of Agriculture for the year 1912-13, it will be clear that during the earlier years the financial aid given to the College by the state was rather meager, and it will be noted that from 1885 to 1900 no state funds were appropriated for current expenses. During that period the running expenses of the institution were necessarily confined to the income from the Land Grant fund and the small receipts from farm and student fees.

"It may seem strange, but it is none the less true, that for many years the idea of an agricultural college did not appeal strongly to the farmers of the state, and, as this interest was always well represented in the legislature, it was natural, though indeed unfortunate, that a narrow and parsimonious policy should be pursued. There were some notable exceptions to the rule of indifference among the farmers, and the College owes much to the active friendship of such men as Jonathan J. Woodman of Paw Paw, for many years a member and speaker of the house of representatives. As master of the State and later of the National Grange, he interested the members in the welfare of the College and since that time the Grange has been a strong supporter of the institution and has made itself felt in legislation affecting agricultural education. In much the same way the Federation of Farmers' Clubs has for many years lent its aid in securing generous appropriations.

"For a good while there has appeared to be some prejudice against the existence of an engineering department at the College for the reason that engineering is also taught at the University. At the recent session of the legislature (1913) this feeling showed itself more strongly than heretofore and seemed likely to seriously embarrass the appropriation bill. A bill,

increasing the mill tax from one-tenth to one-fifth, was unanimously passed by the senate, but the Ways and Means Committee of the house held it up and announced that it would not be reported out.

"When this situation came to the knowledge of the officers of the College, they asked for a hearing before the committee and this request was rather grudgingly granted.

"Accordingly, on the 13th of March, a considerable number of the most prominent men of the state met at the Capitol to present the needs of the College to the members of the Ways and Means Committee. Notable among these were Judge Wm. L. Carpenter, an alumnus of the College, Judge Williams of Allegan, representing the State Bankers' Association, Mr. C. E. Bassett of Fennville, Secretary of the State Horticultural Society, Mr. John C. Ketchum, Master of the State Grange, and Mr. George B. Horton and Mr. N. P. Hull, Ex-masters of that organization. The federated chambers of commerce were also represented and the committee was addressed by prominent citizens and business men of Lansing and other cities. Altogether it was perhaps the most notable and representative body of men that ever addressed a legislative committee on the subject of an appropriation bill.

"As a direct result of this hearing, the committee in a measure yielded to the demand made upon it and reported out the bill at one-sixth instead of one-fifth of a mill. While the College officers felt that this was an unwarranted cut in the appropriation, yet this could have been overlooked had the committee not added, in a spirit of hostility to the engineering work, a proviso that the appropriation would be void if more than \$35,000.00, no matter from what source derived, should be spent on the mechanical and engineering division. Such a proviso is absolutely incapable of execution, because there is no means by which the cost of educating engineers can be separated from the cost of educating students in other courses.

"It is most unfortunate that two or three men, unacquainted with conditions, and with an assurance born of ignorance and prejudice, should be able to disturb the established policies of a great educational institution.

"At this time negotiations are under way for a very important addition to the College farm. The Board of Agriculture has by legislative authority purchased twenty-seven acres of the C. D. Woodbury farm lying adjacent to the College athletic field and has leased the remainder, about 209 acres, for a period of ten years with an option to purchase. Before the expiration of the lease this will doubtless be made part of the College domain and will furnish much needed opportunity for expansion."

Here follows a table prepared by Hon. A. M. Brown, secretary of the State Board of Agriculture showing the income of the Michigan Agricultural College from all outside sources from the date of its foundation to the present time, June 30, 1913. It will be observed that more than half of this income has come from acts of the national government.

ENDOWMENTS AND APPROPRIATIONS.

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Year.	From State Legislature.			From U. S. Congress.			Total.
	For current expenses.	For special purposes.	Land sales, salt spring and swamp land grants.	Morrill act of 1862, interest from land grant and trespass	Hatch act of 1887, and Adams act of 1906, experiment station.	Morrill act of 1890, supplementary endowment.	
1855.			\$56,320 00				\$56,320 00
1856.							
1857.	\$40,000 00						40,000 00
1858.							
1859.	37,500 00						37,500 00
1860.							
1861.	6,500 00		152 25				6,652 25
1862.	10,000 00		218 97				10,218 97
1863.	9,000 00		407 80				9,407 80
1864.	9,000 00		726 09				9,726 09
1865.	15,000 00		1,156 61				16,156 61
1866.	15,000 00		1,094 27				16,094 27
1867.	20,000 00		7,608 38				27,608 38
1868.	20,000 00		592 49				20,592 49
1869.	20,000 00	\$30,000 00	17,559 00	\$58 96			67,617 96
1870.	20,000 00		1,320 02	2,720 93			24,040 95
1871.	18,250 00	10,500 00	4,135 72	3,785 54			36,671 26
1872.	18,250 00	3,000 00	217 05	7,175 65			28,642 70
1873.	21,796 00	15,602 00	10 13	11,059 06			48,467 19
1874.	13,000 00	15,602 00	150 13	14,061 98			42,814 11
1875.	7,688 00	7,755 50	144 53	14,446 14			29,984 17
1876.	7,638 00	6,755 50	1,773 09	16,830 17			32,996 76
1877.	6,150 00	30,686 80	979 06	15,172 86			52,988 72
1878.	6,150 00	5,686 80	826 60	15,807 09			28,470 49
1879.	4,971 80	16,068 32	712 22	16,978 22			38,730 56
1880.	4,971 80	7,068 32	797 55	17,837 24			30,674 91
1881.	7,249 00	43,720 50	461 95	20,935 25			72,366 70
1882.	7,249 00	8,945 50	358 46	22,507 45			39,060 41
1883.	8,385 00	23,793 00	391 95	30,749 60			63,319 55
1884.	8,385 00	10,526 00	1,259 90	27,909 72			48,080 62
1885.		35,103 00	187 50	29,770 40			65,060 90
1886.		22,617 00		30,461 04			53,078 04
1887.		*44,040 00	198 20	†24,611 37			68,849 57
1888.		30,752 50	144 20	32,406 60	\$15,000 00		78,303 30
1889.		*20,973 00	10 50	31,322 69	15,000 00		67,306 19
1890.		*27,172 00	238 50	32,360 64	15,000 00	\$15,000 00	89,771 14
1891.		22,947 50	37 38	34,750 54	15,000 00	16,000 00	88,735 42
1892.		22,947 50	137 38	34,948 12	15,000 00	17,000 00	90,033 00
1893.		18,862 50	10 50	37,927 04	15,000 00	18,000 00	89,800 04
1894.		18,862 50	433 59	44,527 26	15,000 00	19,000 00	97,823 35
1895.		†19,000 00	10 50	45,301 85	15,000 00	20,000 00	99,312 35
1896.		†16,000 00		43,886 40	15,000 00	21,000 00	95,886 40
1897.		†17,700 00		43,779 54	15,000 00	22,000 00	98,479 54
1898.		17,500 00		47,508 28	15,000 00	23,000 00	103,008 28
1899.		†8,750 00	705 00	52,526 11	15,000 00	24,000 00	100,981 11
1900.		¶72,500 00	175 00	72,298 38	15,000 00	25,000 00	184,973 38
1901††		¶72,500 00		63,976 79	15,000 00	25,000 00	176,476 79
1902.	100,000 00	**1,000 00		64,081 81	15,000 00	25,000 00	205,081 81
1903.	100,000 00	**1,000 00		65,573 90	15,000 00	25,000 00	206,573 90
1904.	100,000 00	**1,000 00	61 19	67,312 37	15,000 00	25,000 00	208,373 50
1905.	100,000 00	*81,000 00		72,035 32	15,000 00	25,000 00	293,035 32
1906.	157,810 00	*15,000 00		70,286 56	15,000 00	25,000 00	283,096 56
1907.	173,410 00	*1,000 00		70,155 22	23,691 60	25,000 00	293,256 82
1908.	173,410 00	**1,000 00		70,385 79	23,326 10	30,000 00	298,121 89
1909.	173,410 00	**1,000 00		69,527 13	26,000 00	35,000 00	304,937 13
1910.	173,410 00	**1,000 00		71,109 49	28,000 00	40,000 00	313,519 49
1911.	173,410 00	**1,000 00		70,304 15	30,000 00	45,000 00	319,714 15
1912.	228,800 00	**1,000 00		70,265 32	30,000 00	50,000 00	380,065 32
1913.	228,800 00	**1,000 00		70,289 30	30,000 00	50,000 00	380,089 30
Totals.	\$2,244,543 60	\$829,937 74	\$101,723 66	\$1,771,725 27	\$476,017 70	\$645,000 00	\$6,068,947 97

*Including appropriation for weather service.

†October 1, 1886, to June 30, 1887, nine months.

††Including \$5,000 for institutes and \$1,000 for weather service.

¶Including \$5,500 for institutes and \$1,000 for weather service.

|| Including \$5,500 for institutes and \$1,000 for weather service.

§Including \$2,750 for institutes and \$500 for weather service.

††To June 30. **Weather service.

CHAPTER XXII, IN CONCLUSION.

This chapter gives an opportunity to present some items left over and to pass in review some of the most important conclusions of the preceding chapters.

THE MARKING SYSTEM.

Until about ten years ago each teacher was required to mark on a scale of ten for perfect each recitation during the term. The same scale was used for the final examinations; the average of the marks of the term was added to the mark for the examinations and divided by two, giving what was known as the student's rank or standing.

This plan was succeeded by the one still in vogue, which does not appear to be quite so exact, viz., by letters A, B, C, D, F.

THE COLLEGE BELL.

Dr. Kedzie in the *Heliostat*, Junior Annual, Class of '97:

"I do not know when the bell first came to college, but for more than thirty-three years it has given tongue to the duties of the hour. Its home at first was under the shade of an old oak tree, south of the walk and about midway between College Hall and Williams Hall, resting on a rude frame about ten feet above ground. Thence it was removed and mounted on a stout pine frame in the grove about six rods north of west of the mechanical laboratory, close by the open-air gymnasium (trapeze) that developed our early athletes. It remained in this place for many years till complaint was made that it could not be heard on the farm south of the Red Cedar river, and there was danger that the boys would exceed the three hours' work then required. The college authorities then said to the faithful servant 'Come up higher,' and placed it on top of Williams Hall.

"The life of the bell has not been entirely uneventful. When it dwelt under the oak, on its frail shelf, somebody would occasionally turn the mouth of the bell upward, filling it with water and leaving it so insecurely braced that when the bell boy came at five o'clock in the morning to ring the rousing bell, he 'received a baptism from on high' that did not seem to improve his religious nature.

"In 1862 somebody stole the clapper, and the voice of the bell was no longer heard. After two days' hilarious hunt a lucky student found the clapper. This was restored to its normal position, and 'all went merry as a marriage bell.'

"In 1863 the clapper was again stolen, found, and returned. Frank Gulley and Robert Kedzie unscrewed the nut that fastened the clapper in the bell, swabbed the inside of the nut and thread of the bolt with solution of salammoniac, screwed the nut firmly in place, where it would rust tight, riveted the bolt upon the nut, and the clapper has never left the bell since that time."

After years of service the old bell became cracked and failed to answer its purpose. A new one took its place. The old original cracked bell is

hung in the belfry of the village school where it answers a very good purpose, saying "Come to school and prepare for college."

THE FORTIETH ANNIVERSARY.

On May 13, 1897, the college was forty years old. Memorial exercises were delayed until June 17, 1897.

The chief address was delivered by Hon. George Willard of Battle Creek, who was a member of the State Board of Education in 1857, then in charge of the College and who was also present at the opening, I note the following points:

"It is but just to also add that the hopes indulged when this college was founded have been fully realized. The reality has even gone much beyond the expectancy of at least many who projected and inaugurated an undertaking which bore in many quarters the imputation of being injudicious and hazardous.

"History has been recording marvelous changes since this College was



Arboretum in Winter.

established. Forty years in this age of progress has measured an important cycle in the world, in our country, and in our state. When this institution took its place as a seat of learning in 1857, in our country, California, then recently acquired from Mexico and admitted into the Union, was the only state west of the Missouri river. Lincoln had acquired some fame, but had yet to win a greater distinction in the debate with Douglas; Grant was farming near St. Louis; Garfield had just left college; Blaine, a youthful journalist, was editing a newspaper in Maine; Edison, the world's greatest electrician and the greatest inventor of our age, was a poor ten-year-old lad at Port Huron."

"In 1857, Michigan had only become a state twenty years before.

"The Michigan Agricultural College is just two-thirds as old as Michigan herself. The state capital, at the date we are considering, had been at Lansing but nine years. The State Normal School had just begun to send out its first pupils. The first diploma granted by the University had gathered the dust of not quite a dozen years. The great chasm between the grammar

and primary schools on one hand, and the University on the other, stood open to be filled by the graded and high school system in the towns and cities.

"It was a common remark that on this ground alone, the legislature in selecting the site of the institution had perpetrated a great folly, a charge that time had made obsolete, long ago.

"Forty years since, no college in the United States has been emancipated from the idea that it must have a single unvarying curriculum and that no one was liberally educated unless he had entered and passed through that straight and narrow way by which a chosen few had journeyed to the honors of graduation; and yet when a college student had reached all these honors, he was really less disciplined in useful training, and less fully equipped with needed information than the present graduates from our high schools. A college course at Yale or Harvard, and in all institutions which, like the University of Michigan followed in their wake, was of one stereotyped pattern transmitted from mediaeval times, much better fitted for monks and ecclesiastics than for the widening and exacting requirements of practical, modern life. Just about the period when this College was opened, the American people began to realize the need of directing educational agencies to more useful ends and of enlarging the scope of college instruction.

"That this institution is now, and has been, a most efficient aid to farming interests in our State and in the entire country is clear to anyone conversant with its record. There is not an agricultural industry in Michigan, or in the United States, that has not felt the beneficial touch of its influence, either through its class instruction, its scientific experiments, its periodical reports and circulars issued by its professors presenting the results of their inquiries, the lectures given by the members of its faculty to farmers' institutes and other agricultural meetings, the sending forth of alumni into all parts of the land as living epistles of the information it imparts, and perhaps more than all, in the creation of a public opinion that the world's greatest industry merits the application of science and the use of scientific methods.

"The people of Michigan have long since learned that the most practical lessons in agriculture, the most profitable, the most money-making in every branch of that industry, have come from the professors and graduates of this institution.

"The Board chose for the first president of the College, the Hon. Joseph R. Williams, who had acquired a notice which may be said to have become national for his forcible and eloquent appeals for the application of science to agriculture.

"This is an age of scientific inquiry; it is an age when knowledge is sought for practical uses and when higher education is claiming its place in the workshop, in the counting room, on the farm, and in the kitchen. And it is especially gratifying that this superior type of education, in this College as well as in the University, is now provided for women as well as men.

"But above all, and greater than all actual science which this College teaches, is the spirit of investigation which pervades it, and the welcome it gives to truth in every department of knowledge. The range of its studies cultivates a tendency to see things as they are.

"This College presents a model for institutions which must be greatly multiplied in the next and succeeding centuries. It symbolizes the era of intellectual freedom; it is the product of that practical philosophy which comes from modern ideas. Whatsoever may be our regard for the classic ideals embodied in ancient literature and art, they cannot hereafter be

made the chief objects of collegiate study. They may have been excellent in their time, but the old must give way to the new."

Other items were passed in review.

As master of the State Grange, George B. Horton spoke briefly, I quote:

"I am proud to stand before you as a representative of a great and influential farmers' organization that has always supported the Agricultural College in all its efforts and work. It is gratifying to note that several important features of college work have been brought about through the suggestions and solicitations of the Grange; notably, the farm Reading Circle, admission of girls to full privileges with boys, and the establishment of an operative dairy department."

For the Farmers' Clubs, J. T. Daniels closing sentence was:

"In conclusion, I feel that I may safely assert that in so far as our State Agricultural College holds to the purpose for which it has been established, and produces practical results along those lines, the farmer's clubs of Michigan will give to it consistent, earnest, practical and loyal support."

LARGE CLASSES AND CHEAP TEACHERS.

This unfortunate condition is referred to elsewhere and is likely to occur when the increase in the number of students is rapid. The increase of expenses may appal president and Board and legislature, inducing them to "get along in some way" as cheaply as possible, as was the custom when Dr. Abbot presided, and there is danger that this will become a fixed habit. This topic has frequently been referred to in my reports to the president—the danger of yielding to the tendency by shortening the periods of laboratory work, enlarging the sections, employing cheap instructors often changed, thus reducing the quality of the work to about that in most high schools. The same conditions have also been referred to by other members of the faculty.

Read Dean G. W. Bissell's report for 1908:

"Table 6 gives certain information concerning the number, grade and salaries of the instructing force at several periods in the last twenty years or so of the College history. By way of summary it may be noted that in 1885, there were twelve professors (including assistant professors) for 173 students, or one professor for fifteen students. In the past year there were thirty professors and assistant professors for 1,911 students, or one professor for thirty-nine students; the total instruction force in the past year was eighty-one, being one instructor for fifteen students. Adding to the number of professors those of instructor grade who receive as much salary as some assistant professors, there were thirty-eight high grade instructors during the past year, or one for thirty-one students. A legitimate conclusion from these figures is that the efficiency of our instruction has been materially and seriously reduced.

"These figures, after making all allowances for varying conditions, are significant and point forcibly to the necessity of increasing the salary budget for this institution, both as a total and as a scale for the several grades, if we would maintain our reputation as a high grade institution.

"The ideal scheme of salaries should include a plan of promotion in the several grades, so that new men would know what prospects are before them if they render satisfactory service. Under the present arrangements at this college we frequently cannot attract desirable men, not only because of low initial salaries but also because of indefiniteness of reward for good effort." Dean Bissell summarizes the views of nearly all, if not all heads of departments.



Half-way Rock and Cherry Tree.

Two stanzas from Frank Hodgman, class of '62:

"When half the toilsome way was passed, we rested by the stone
Within whose cleft a cherry pit had taken root and grown;
The cleft was not so very wide; just half an inch or so;
The little tree scarce touched its side some forty years ago.

Forty years ago: Forty years ago:
The cleft has spread; the tree has grown since forty years ago.

"And then we sowed that turnip seed. The yarn went all around
About such lots and lots of seed sowed on so little ground;
And as it grew, each mother's son who went along the plank
Declared the college must be run by some half-witted crank.

Forty years ago: Forty years ago:
Their lies were thicker'n turnip plants were forty years ago."

SMALL SALARIES AT MICHIGAN AGRICULTURAL COLLEGE.

There is not a college or university in the United States that does not occasionally meet with the loss of some of her most valuable professors right in the prime of active and successful service,—the lower the salary paid the greater risk of such a loss. The salaries at the Agricultural College have always been low when compared with those at the University, and with a considerable number of the best agricultural colleges in the land, perhaps in our case because the institution was young and small and was a farmers' college, yet for efficiency, several of the positions at an agricultural college are most exacting. I need not give examples; every member of the State Board has them in mind. There isn't a shadow of a doubt that Michigan Agricultural College has fallen behind owing to the repeated loss of some of her best men, to say nothing of selecting and retaining men who were inefficient. Especially is this true where the professor has charge of a farm, domestic animals, a campus, orchards, and garden and in addition to all this must have oversight of a laboratory and conduct experiments. As formerly stated more than once, when a good man lays down his work it often takes two or three years for his successor to gather up the threads and begin anew. In this way thousands of dollars have been lost, which, if added to retain the good men in the harness, would be economy in the end.

During the forty years beginning 1870, there were ten different professors of agriculture, and ten professors of horticulture, an average of four years to each. Think of it! There is no doubt that the growth of this College has been retarded fully fifteen years by a number of injudicious appointments and by frequent changes of the members of the faculty.

Perhaps unavoidable, but as the writer sees it, one of the greatest mistakes for all concerned was settling down to the idea that the salaries paid professors in this College must be kept lower than those of the University.

WHAT IS COLLEGE SPIRIT?

One wise M. A. C. teacher replied, "It is making a h——l of a noise about athletics." In the writer's opinion it does not consist entirely in loud cheering at banquets or on the grand stand in front of a winning game by our team,—these things encourage some people. Let me be personal by giving an example: In '59 I graduated in a class of thirty-nine men at the U. of M. and knew intimately every member of the class. We were not noisy boys.

While a student, I held the University in high esteem and that esteem has not grown less. Two years later I began a post-graduate study in botany and zoology at Harvard, working for one year with students fewer than fifteen in number. The second year there were only three of us. None of us were training in athletics, yet, I still retain something akin to devotion to Harvard University.

Can I not call this college spirit in the best sense?

In 1908, at a meeting of a number of scientific societies held in Chicago, the professor of botany at Cornell, Atkinson, voluntarily remarked to the writer that the agricultural college of Cornell exhibited more loyalty than any other one of the colleges composing the university. L. H. Bailey in 1908 wrote:

"I think it is generally recognized that the most solidified and enthusiastic college spirit in Cornell University is in the college of agriculture. This is due in part to the fact that the faculty and students are aware that agricultural education in the past has not been considered to be of equal academic grade with other means of education. Every person connected with the college feels that special obligation rests on him to make the college of agriculture a wholly worthy unit in a great university, in which all kinds of human affairs are likely to be contending for acknowledgment or supremacy. This puts the students and others on their mettle. This kind of productive, but conservative enthusiasm is, I think, quite unknown in the separate agricultural colleges because they make their own standards, and in a way are sufficient unto themselves."

He says "College spirit is the soul of an institution." A writer in the Ohio State Lantern quoted in the M. A. C. Record Feb. 25, '08 says:

"College spirit does not consist entirely of attendance at games with a megaphone ready to root for the home team. It is not confined to this ostentatious exhibition of enthusiasm. In fact, this forms a very small part of the true college or university spirit. The real spirit and the spirit that counts is that which shows the willingness to work for the institution which is represented by the worker and a spirit which is willing to sacrifice self-interest at times for the sake of alma mater.

Kenyon L. Butterfield, '91, President of Massachusetts Agricultural College says:

"College spirit is difficult to describe. It is a real thing but it is intangible. It may not always manifest itself in the same fashion.

"It seems to me that in general it may be said to be the community idea with the college as the concrete object of devotion, as over and against the personal and selfish interest. It is the expression of the thought 'not what I can get, but what I can give.' It has several prominent characteristics.

"1. Loyalty to the best interests of the college.

"2. A sense of honor which craves a reputation for the college based on real spirit.

"3. A spirit of co-operation which shows itself in willingness to work with other students, with alumni, with faculty, and with the trustees for progressive steps.

"4. The lopping off of an undue spirit of criticism and an undue spirit of independence.

"5. Enthusiasm for college activities and college triumphs not only in athletics, but in scholarship and in all the work of the institution.

"6. A real affection which personalizes the college, and which brings men back to it full of sentiment and real devotion. Out of this should spring

a spirit of sacrifice, not only in the college, but in future days, and a willingness to help whenever the college needs help."

In speaking at the Ward-A banquet one night in 1911, Inspector Bowditch brought out some points that would make phases of our college spirit appear to be far superior to that of any other time in the history of our college. "Never before have the men in the dormitory pulled together as they are right now. Scarcely five years ago a man did not dare to leave his room without locking the door, lest he not only suffer the loss of several articles of furniture from 'stacking,' but that he might not have his property actually stolen. In comparison to this, to-day we find men leaving their rooms unlocked from one term to another. Thefts are unheard of. We do not even have a picture of a 'stacked' room. Furthermore, the fellows are more closely associated and enjoy a fellowship that was not equalled when dorm rooms were mere stopping places, instead of living rooms."

Even with the most fortunate management, however, any college is liable at any time to have one or more students who steal or carouse.

NAME OF THE COLLEGE.

Long ago when first organized this college was named State Agricultural College.

In 1909 by an act of the legislature, the name was changed to read Michigan Agricultural College.

While yet no other division than that of agriculture had been inaugurated at this state institution, The Speculum in October, 1884, observed:

"A change in the name that would imply the scientific as well as the agricultural character of the school, and the use of proper and sufficient means to make the college widely known and understood as it is, and as not wholly agricultural, would, it can hardly be doubted, result in a large increase in the number of students."

In his address to the Alumni Association in 1897, C. B. Collingwood, '85, said:

"Personally, I wish we could change the name of our college, broaden it. I would like to have it called the 'Michigan School of Applied Science!' We received this million of dollars from the federal government for a broader purpose than a mere school of agriculture."

In the writer's addresses to associations of the alumni in Chicago, Detroit, Grand Rapids, Washington, Boston, and elsewhere, he referred to the name of Michigan Agricultural College as no longer suitable for the institution at East Lansing. It is a name that all the older conservatives cling to, but in time these will all disappear, and the younger alumni will consist of persons not only of the division of agriculture, but of the division of engineering, the division of home economics, for forestry, and later for veterinary medicine, not to mention the sixth division of arts and sciences liable at any time to be established, and perhaps others to follow. Why not have a division of athletics?

Iowa, Pennsylvania, Mississippi have made changes in name. The name State College would do equal justice to each division at East Lansing.

In April, 1901, Dr. Howard Edwards in the M. A. C. Record has this to say:

"It is as unwise to expect a mechanical engineer to be satisfied with graduating from the Agricultural College, as to demand of an attorney-at-law that he take pride in displaying his LL. B. diploma from the

dental college. There is only one strong argument in favor of a retention of the present name, and that is the halo of glorious achievement that shines above the old name. It is under this name that it has fought its battles and won its victories. Fifty years of history hallow this name. The long line of honored alumni bear M. A. C. on their diplomas and have used the name all along as their rallying battle cry. Shall we leave all this and go after strange gods—cut ourselves off from all the past and trust ourselves to make a new past out of the present and the future?

"The name becomes deceptive and the seriousness of the deception increases in geometrical ratio with the importance and size of the institution. We have fifty years behind us, but our faces are toward the long years of the future. Shall we sacrifice the hallowed past or the unknown but flattering future? It is hard to choose, but wisdom leaves us no doubt what the choice should be."

The engineering division was founded in 1885 and has rapidly increased in size and importance. Not long after students of this division began to chafe, on the ground that they were looked on with suspicion when seeking employment.

On the morning of November 28, 1911, students getting up found posters under the doors with large headlines—"Michigan State College" or "Michigan Agricultural College," followed by one or two reasons why the name should be changed and urging students to get new songs and yells and use them at the next mass meeting.

In 1907, when the new act governing the College was considered for presentation to the legislature Dean Bissell met with the Board of Agriculture and gave some reasons for change of name. The Board decided adversely. On the first week of December a meeting of senior engineers was called, a week later an association was organized, and enthusiastic meetings followed. On December 8, the engineering society held a banquet where toasts were served by Dean Bissell with plans for placing the matter before the state legislature. This kind of agitation is going on in Oregon and Kansas and probably elsewhere. Extension work has tended to popularize the agricultural division over that of the engineering division not thus advertised.

COLLEGE ETHICS.

A good point in favor of President Snyder's administration is here mentioned: In recent years, through the students' council, the director of athletics and committees of the faculty, barbarous hazing of many sorts has been changed to orderly sport conducted in broad daylight. Details of the program are liable to change from year to year, but the ceremonies consist in physical contests between the sophomores and freshmen, such as a canvas pull, tug of war, and flag rush.

Hazing has no redeeming feature to commend it. President James of Illinois says: "The habit injures the prestige of the university, and holds the institution in the public mind among the half-baked universities of the country; keeps away from the university some of the best material which would otherwise come to it; makes it difficult to get public appropriations; stirs up antagonism toward the institution in many quarters and is the cause of joy to the critics and enemies of the university."

OUTSIDE ACTIVITIES.

As the college has grown older, there has been a marked increase in the number of activities outside of the legitimate pursuit of the courses of study.

The advent of these activities, the writer feels confident, is the cause of a decline in the proportion of good scholars. Doubtless the same is true with many other colleges and universities. There are more sons and daughters of the rich who attend high schools and colleges chiefly for the purpose of having a good time, as John O. Reed, Dean in the University of Michigan, says in the M. A. C. Record November 23, 1909:

"The intellectual hoboes and loafers come generally from families of good circumstances, and are just as much undesirable students as the professional hobo is an undesirable citizen. They exert an influence directly counter to the educational and scholarly atmosphere of the institution to which they attach themselves.

"The intellectual hobo is at the bottom of every surprising outbreak of disorder. He may be an athlete or a fop, or both combined."

The Editor of the *Holcad* for January 14, 1913, says: "Life has lots more in it than Bijous and parties and J. Hops. There are many things worth while, though they may not be stunning."

CO-OPERATION OF UNIVERSITY. AGRICULTURAL COLLEGE AND STATE MINING SCHOOL.

In December, 1911, at the suggestion of Governor Osborn, President Harry B. Hutchins of the University, President J. L. Snyder of the Agricultural College and President F. W. McNair of the College of Mines, met in Detroit with the view of attempting to reduce the overlapping of courses, to reduce the cost of maintenance, and make plans for co-operation. Forestry and engineering are taught in the University and at the Agricultural College. Future meetings were held at the University, at the Agriculture College and at the School of Mines.

In the past discussions of this kind have received much attention at Harvard and Yale, where in each case a scientific school was made a portion of the University. Even at the Agricultural College during the forty years while the writer was a member of the faculty, there was much discussion regarding the repetition of certain subjects by different departments. Especially was this conspicuous on the appointment of a new member of the faculty.

Most of the overlapping and repetition by different departments is the outcome of different views taken by different persons and is not so objectionable as it might first appear to be.

The main argument against the establishing by the state of a second normal school was that the equipment and teaching were a needless repetition, that this repetition would injure the institution at Ypsilanti. The results have proved otherwise.

Methods of teaching were given prominence at Ypsilanti from the start, yet the University, only ten miles distant, long ago established a department to engage in much the same kind of work. The State Normal College has continued to grow and become more efficient.

In an earlier chapter, the writer referred to the rules for conduct of the students in force during the administration of Presidents Fisk and Abbot—rules making attendance at chapel compulsory and forbidding dancing and card-playing. In another place he referred to the giving up of chapel exercises, and to the frequency of dances at parties; in fact the attitude of most educated people has changed in a marked degree during the last thirty-five years. Dr. Hinsdale has mentioned similar conditions of things in his *History of the University*:

"The University has shared in the unmistakable movement of the last fifty years. The ecclesiastical habit of mind has to a great extent given away to the scientific spirit; the institutions and functions of the state have become more secular; even the denominational schools have not preserved their ancient character; clergymen are less numerous relatively in faculties and on boards of control; the rules that were cheerfully obeyed by the student of the old institutions would produce an instant revolt if an effort were made to enforce them to-day.

Daily prayers were maintained with a relatively small and slowly diminishing attendance, until 1895, when they were discontinued."

AIMS OF THE COLLEGE.

This College is one of the chain of colleges, one in each state, endowed with the spirit of investigation, the laboratory method of teaching, with special reference to training students for efficiency.

In the words of Dean Davenport it is one of those that "have developed into public service institutions of the widest scope and greatest magnitude."

These methods are gradually being introduced and followed by the foremost universities of this country.

It is not probable that these land-grant colleges will receive liberal gifts of money direct from wealthy persons; they are not purely state colleges but receive half or more of their support from the United States government. This is a distinct advantage, as it tends to stability and progress.

At the convention of the Association of American Agricultural Colleges and Experiment Stations held in November, 1910, a standing committee made a long and very important report on extension work. Here are the names of the committee:

K. L. Butterfield, President of Massachusetts Agricultural College.

C. R. Van Hise, President of Wisconsin University.

C. F. Curtiss, Dean of Agriculture in Iowa Agricultural College.

W. C. Latta, Superintendent of Farmers' Institutes for Indiana.

A. M. Soule, President of the College of Agriculture, Georgia.

E. A. Burnett, Dean of the College of Agriculture of the University of Nebraska.

The names of half of this committee, including the chairman, appear in the list of alumni of Michigan Agricultural College—Butterfield, Latta, Burnett. In the past the writer has often handed notes to the Record mentioning the achievements of graduates of M. A. C. He could now fill a page, or indeed, the whole of the paper, mentioning the acts of worthy graduates distinguished for their very able efforts in agricultural education. This condition of things cannot be accidental. The faculty and Board of Agriculture would do well to investigate this subject and if possible discover the reasons for this prominence and then see to it that the supply of such persons is kept up. Most of the names referred to appear among those graduating between 1861-1896. What are the reasons for this prominence? Was it due to the habit of going in and out of old College Hall? Had compulsory manual labor anything to do with it? Was it due to the courses of study, methods of study, methods of teaching, character of the teachers, wisdom of the Board of Agriculture? Was it due to the quality of pabulum for body and mind, the simple life in dress and furnishing of rooms, the giving of less time to social functions, the absence of athletic contests with students of other colleges?

Can any one or more of the above be the reasons for the success of such a large proportion of alumni?

Besides learning from text books and lectures, students did things in laboratory, shop and field. The training for efficiency was always kept prominent. Not only were students taught to think and acquire knowledge for themselves, but they tried to perform certain important tasks in care of crops, feeding animals, conducting experiments and making machines.

During this period of thirty-five years, six to eight or more of the professors were business men at the same time they were teachers, and this gave the students an extra good chance.

M. A. C. UNFORTUNATE.

As a last word permit the writer to again mention some of the leading things which seem to him to have prevented a more rapid development—beginning in the woods; having no model to follow; the distracting influences of the civil war; repeated unsuccessful efforts to remove the College and unite to the University; low salaries, making it difficult to secure and retain the best men; compulsory manual labor for pay without sufficient number of competent instructors; unfortunate appointments of some incompetent persons.

M. A. C. has been fortunate in persisting in a small way, still learning to avoid mistakes and seek new devices, in beginning institutes and other kinds of extension work, in having the active support of the State and National Grange, in becoming one of the land-grant colleges with increasing endowments from Congress.

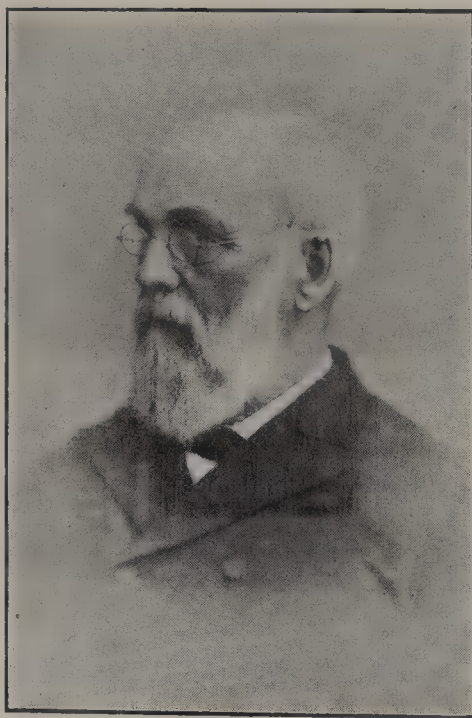
BIOGRAPHICAL SKETCHES OF TRUSTEES AND FACULTY.

STATE BOARD OF EDUCATION.

From 1857 to March 15, 1861, the college was under the control of the State Board of Education, appointed by the governor.

SUPERINTENDENTS OF PUBLIC INSTRUCTION, EX-OFFICIO.

*IRA MAYHEW (1855-59). He was born March 22, 1814, at Ellisburg, Jefferson county, New York; married Adeline Sterling August 26, 1838; was



IRA MAYHEW.

educated in the common school and Union Academy, Belleville; a democrat until 1854, after which he was a republican. He taught school from 1832 to 1836; principal of Adams Academy 1837 to 1841; superintendent of schools in Jefferson county, New York; came to Michigan in 1843 and became principal of the Monroe branch of the University; state superintendent of public instruction 1845 to 1849; published *Means and Ends of Universal Education*; *A Treatise on Book-Keeping*. He was principal of Albion Seminary 1852; state superintendent of public instruction 1855-1859; established Albion Commercial College, and later moved it to Detroit; collector of internal revenues for the third district of Michigan 1862-1865.

He died at Detroit, Michigan, April 7, 1894.

Children: Ellen Emma, died 1907; Frances, born June 9, 1844, died Jan. 20, 1870. She became the wife of H. H. Sutton. They had three children, one of whom is John Mayhew Sutton, 100 Englewood Ave., Detroit, Michigan (1911).

*JOHN MILTON GREGORY (1859-61). He was born at Sand Lake, Van Renssalaer county, New York, July 6, 1822. His father's name was Joseph. He married (1) Julia Gregory, a distant cousin, at Sand Lake, New York in 1846; she died at Buffalo, New York in 1877; (2) His second wife was Louisa Allen at Champaign, Illinois in 1881.

He was a Baptist and a republican; educated at Ann Academy, Poughkeepsie, New York, and Union College at Schenectady, New York; LL. D. from the University of Wisconsin. He was pastor of churches at Little Falls, New York; Akron, Ohio and Ann Arbor, Michigan; principal of a Latin school



JOHN MILTON GREGORY.

in Detroit; editor of the Michigan Journal of Education; state superintendent of public instruction of Michigan 1859-61; about 1860 gave a brief course of lectures to seniors of University of Michigan; president of Kalamazoo College; president of Illinois Industrial University, later called State University; United States Commissioner for Illinois to the World's Fair at Paris 1878; member of the board of health for Illinois; member of the board of the United States Civil Service Commission under President Arthur; travelled for two years for the trustees of the Peabody Fund inspecting institutions for educating negroes.

Children: By first wife: Mary Emeline, Walter, Helen Barber, Alfred Gregory, Kansas City, Mo.; John, Grant, Julia. By second wife: Allene.

MEMBERS BY APPOINTMENT OF THE GOVERNOR.

*HIRAM LINDSLEY MILLER (1857-58). He was born January 28, 1804, at Morristown, New Jersey.

He married Adeline Little of Avon, New York, June 6, 1830. He was educated at the academy in Morristown, and the Theological Seminary at Auburn, New York. In religion he was a Presbyterian, in politics a republican. He was ordained a minister soon after graduation, and preached at Avon; next at Brighton, which later was a part of Rochester, New York; Trumensburg, New York; then in 1836 he preached at Saginaw, Michigan, where he soon ceased this occupation on account of throat trouble and engaged in a variety of useful occupations incident to a pioneer life.

Mrs. Miller, daughter of Dr. Charles Little, was born at Avon, New York, November 30, 1810; educated at the Ontario Female Seminary. The value



HIRAM LINDSLEY MILLER.

of Mr. Miller's work in Saginaw for sixty years and that of his wife for fifty-three years, in shaping social and moral tendencies in the hamlet in the wilderness can scarcely be estimated. She died July 27, 1889. He was twice a member of the legislature; a member of a constitutional convention; filled various offices of city and county. In 1857-58 he was a member of the State Board of Education, then in charge of the Agricultural College, and he was president of the Board, made a short speech and presided at the dedication of College Hall May 13, 1857. He died at Saginaw, Michigan, May 16, 1896.

He had one son, Norman L. Miller, who furnishes the above information and a photograph. In 1912 the son's address was 416 South Michigan, Saginaw, West Side.

*JOHN RUSSELL KELLOGG (1857-61). He was the son of Jesse Kellogg of

New Hartford, Conn., and Susanna (Griswold) K., of the same town. He was born in New Hartford, Conn., May 16, 1793. He married Mary Otterson of New York City.

In religion he was a Presbyterian, in politics a Whig, and then a Republican. He went to Oneida county, New York in 1823; next to Marcellus, New York; to Allegan, Michigan, in 1839, where he was a merchant and land agent, and a politician of much prominence; a member of the legislature in 1836; associate justice 1844.

In 1857-61 he was a member of the State Board of Education, then in charge of the Agricultural College and chairman of that body. He contributed a portion of the reports for the College in 1859-1860.



JOHN RUSSELL KELLOGG.

He died in Allegan, Michigan, March 13, 1868, aged 75 years.

Children: Amanda Norton, Eliza Falconer, John Glover, Andrew James and William Thompson. Information was furnished by his grandson, Karl Kellogg, son of John Glover Kellogg, president and treasurer of Howard Thermostat Company, Oswego, New York.

*GEORGE WILLARD (1857-61). He was the son of Allen Willard of Vermont, and Eliza (Barron) W. He was born March 20, 1824, at Bolton, Vermont, and came to Battle Creek in 1836. He died at Battle Creek, Michigan, March 26, 1901.

He married (1) Emily Harris, April 10, 1844, at Battle Creek, Michigan. She was born in the State of New York, educated at Burnt Hills, New York.

She died October 4, 1885; (2) Elizabeth A. (name not complete), 1887, Chicago, Illinois. She died in 1909.

He was a graduate from Kalamazoo College and an excellent scholar. During his active life he was successively an Episcopal clergyman, professor of Latin in Kalamazoo College, from 1856-60 a member of the State Board of Education. For four years this board was in charge of the Agricultural College, and Mr. Willard contributed largely toward its establishment. At its fortieth anniversary in 1898, Mr. Willard showed his unfailing interest in the College by contributing a fine address, full of hope and encouragement.

In 1863, he was elected regent of the University of Michigan, which office he held for two years. Always radical and progressive, Mr. Willard drew up the resolution opening the University to women, which was adopted, and he was largely instrumental in securing the services of President Angell to



GEORGE WILLARD.

the University. In 1866, he was elected to the legislature, serving as chairman of the Committee on Education in the house, and in the following year was appointed to the same position in the constitutional convention, of which he was a member. In 1872, he was appointed a member of the Centennial Board of Finance, and in the same year was a delegate at large to the national republican convention at Philadelphia. In the fall of that year, Mr. Willard was nominated by his party for representative in the forty-third congress, and was elected by the remarkable majority of 7,547. He at once took high rank as a speaker.

In person he was of medium height, erect, robust figure, with a finely developed head, blue eyes, and clear-cut intellectual features. His manner was dignified, and as a conversationalist, he was charmingly entertaining and instructive. In all that tended to the development and progress of

Battle Creek, Mr. Willard took a deep interest, and contributed largely by voice and pen, as well as in other ways, to its prosperity. He was a man of strictest integrity, 'with the courage of his convictions,' as a gentleman in the truest sense of the word; Mr. Willard was deserving of the high regard and esteem in which he was held by all whom he honored with his friendship.

Dr. Kedzie attended the memorial services and spoke upon "Political Leadership," and in reference to Mr. Willard said:

"We first became acquainted in the political campaign of 1856. He was a lover of liberty and believed in it with all his heart. He denounced slavery and the efforts made by some to stop him, met with no success. No matter where he was, he was ever the advocate of education. He was a quick scholar and a patient philosopher. The world is richer that Mr. Willard lived and it is poorer that he died."



WITTER JOHNSTON BAXTER.

Children: Charles Simeon, died in early childhood; Anelia Frances, Mrs. Charles D. Brewer, Battle Creek (1911); Lilla Estelle, Mrs. Ephriam W. Moore, Benton Harbor; George Barron, Battle Creek.

*WITTER JOHNSTON BAXTER (1857-61). He was the son of Levi and Lois (Johnston) Baxter, was born at Sidney Plains, Delaware county, New York, June 18, 1816. Mr. Baxter's paternal great grandfather served during the entire Revolutionary War, enlisting as a private and attaining the rank of captain.

In 1831 the subject of this sketch came with his father's family to what was then the Territory of Michigan, making a home first at Tecumseh, where they remained for five years, when they removed to White Pigeon; thence, in 1848, to Jonesville. Mr. Baxter received his education in the common schools of Sidney Plains, New York, and Tecumseh, Mich., and at the branches of Michigan University in Tecumseh, White Pigeon, and Detroit.

The honorable degree of A. M. was conferred upon him by the University. In 1836, he engaged in teaching, was for one year principal of the Collegiate Institute at Ontario, Ind. During Mr. Baxter's residence in Detroit, he was a working member of the Young Men's Society, and served upon its board as director and as president. At Jonesville he entered into business with W. W. Murphy.

He has been from its organization a member of the firm of Grosvenor & Co., Jonesville; and has been identified with the social, educational and business interests of that progressive town. In 1852, Mr. Baxter was married to Alice Beaumont, a grand-daughter of Myron Holly, who will long be remembered as prominent among the earliest and most uncompromising advocates of the abolition of American slavery. Mrs. Baxter died in 1872. Connected from his boyhood with the Presbyterian church, Mr. Baxter has ever been a staunch adherent to its principles, and is well known as a faithful and efficient Sunday school worker.

In 1857 he was appointed by Gov. Bingham a member of the State Board of Education, and was elected to the position for four successive terms of six years each, serving for twelve years as president. He was secretary of the State Board of Geological Survey from its establishment to his resignation in 1881. Originally a Whig, he has been connected with the Republican party from its organization. He was elected state senator from the ninth district for the biennial term 1877-8. He has been, during his residence in Jonesville, a member of the State Agricultural Society serving one term as president. He was an active member of the orders of Free Masons and Odd Fellows, in Masonry having attained the degree of Knight Templar. In March, 1881, he was elected secretary of the State Board of Corrections and Charities; also a member of the pioneer society, and once president of that society.

From 1857-61, Mr. Baxter was a trustee of the Agricultural College under the title State Board of Education. While a member of the executive committee of the State Agricultural Society he still showed his deep interest in the College. (Mostly copied from the report of the Michigan Pioneer and Historical Society, Volume 4.)

Children: Mrs. Ellen B. Peabody, Hotel Del Sol, 2721 Portland Place, Los Angeles, California (1912).

*EDWIN WILLITS. 1861. See President.

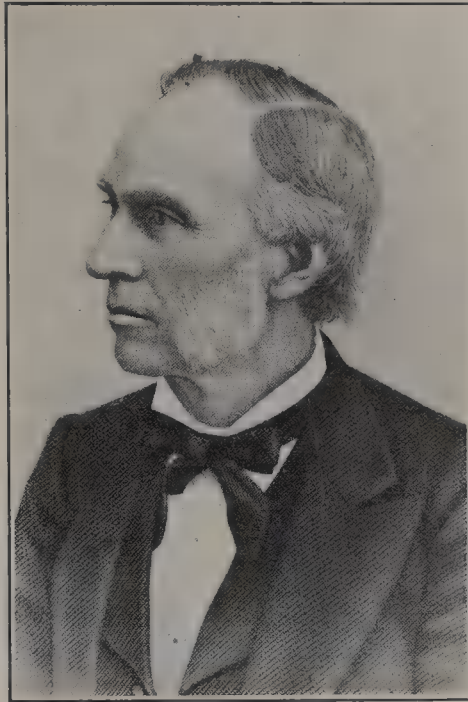
II. STATE BOARD OF AGRICULTURE.

Since March 15, 1861, the College has been under the control of the State Board of Agriculture. Their time of office is six years. In case of vacancy by death or resignation, the Board fills vacancies. The president of the College has always been ex-officio a member of the Board. From March 15, 1861 to 1909, the governor was ex-officio a member of the Board. Since 1909, the superintendent of public instruction has been ex-officio a member of the Board.

The first six members were created by an act of the legislature, after which, until 1909, they were appointed by the governor by the consent of the senate, two being appointed each second year. From 1909 to 1910, there were seven members of the Board.

MEMBERS EX-OFFICIO.

*AUSTIN BLAIR (1861-65), was born at Caroline, Tompkins county, New York, February 8, 1818, son of George and Rhoda (Beackman) Blair. He was educated at Hamilton and Union Colleges and was graduated Bachelor of Arts from the latter in 1839. Upon receiving his degree he at once began the study of law and was admitted to the bar in 1841. He then came west and settled at Jackson, Michigan. He began his political career as a campaign orator for Henry Clay in 1844. The following year he was elected to the lower house of the Michigan legislature and was there instrumental in securing the abolishment of capital punishment in the state. He was an ardent Free Soil man, and later was a participant in the formation of the Republican party. In 1855 he was a member of the state senate. He was



AUSTIN BLAIR.

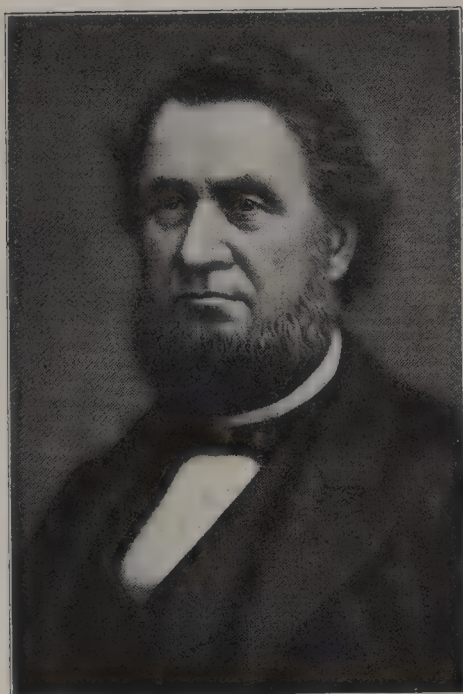
elected governor of the state in 1860, and again in 1862, and was widely known as the War Governor. In 1866 he was elected to congress, and was re-elected in 1868, and again in 1870. In 1881 he was chosen Regent of the University, and served the full term of eight years from January 1. He was one of the ablest, most conscientious, and most efficient members that ever sat in the Board. The Regents of the University conferred upon him the degree of Doctor of Laws in 1890. He died at his home in Jackson, August 6, 1894. The next year the legislature provided for the erection of a memorial statue of him in the Statehouse grounds at Lansing. A son, Charles A. (A. B. 1876,) after serving one term as attorney-general of the state, was a justice of the supreme court of Michigan. There were three other children: George H. (died April 10, 1903); Fred J., now of Washington, D. C., and Austin I., of New York City.

*(Taken by permission from the *History of Michigan* by B. A. Hinsdale and I. N. Demmon).

The lands for the endowment of the Agricultural College were selected by the agents appointed and instructed by Governor Blair. The most charitable explanation to be put on the selection of so large a proportion of jack pine lands is this, that the Governor was no judge of farming land or land well covered by valuable timber.

*HENRY HOWLAND CRAPO (1865-68), son of Jesse C., of Dartmouth, Massachusetts, and Phebe Howland of the same place, was born at Dartmouth, Mass., May 24, 1804.

He married Mary Ann Slocum June 9, 1825; she was educated at Friend's School, Newport, Rhode Island. Mr. Crapo's attendance in school was



HENRY HOWLAND CRAPO.

limited, consisting of three weeks in a small country school, as reported by his grandson, Henry H. Crapo, of New Bedford, Mass.

In religion he was called "Christian," in politics a Republican from the time the party was organized. He was school teacher at Dartmouth, Mass.; in succession he was surveyor, treasurer of an insurance company, and treasurer of the city of New Bedford, Mass.; moved to Michigan about 1853 and engaged extensively in lumbering. He was mayor of Flint; governor of Michigan 1865-69; and president of the State Board of Agriculture during this period.

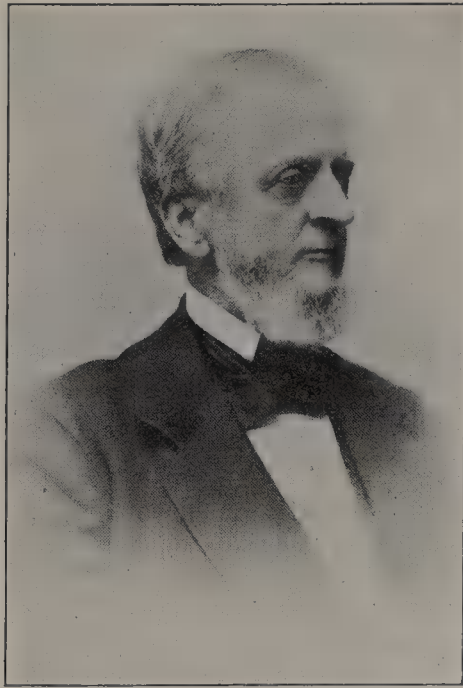
He was an enthusiast in horticulture and agriculture; a voluminous contributor to horticultural magazines, and in his later years, when his means permitted, undertook several large model farms, one of which, in Michigan, is still in operation.

He died at Flint July, 22, 1869.

Children: Mary Ann (Orrell), William W., Rebecca Folger (Durant), Sarah Bush (Ross), Lucy Anna (Smith), Rhoda Macumber (Wilson), Henrietta Pell (Hyatt), Lydia Sherman, Emma Chase (Cristy), Wilhelmina Helena (Clifford).

*Items furnished by Henry H. Crapo, son of William W. Crapo, of New Bedford, Mass.

*HENRY PORTER BALDWIN (1869-73), was the son of John Baldwin, a graduate of Dartmouth College, leaving Henry an orphan when eleven years old. His mother was a descendant of Puritans who settled in Roxbury, Massachusetts, in 1638. He was born in Coventry, Rhode Island, in 1814. When twelve years of age, he secured a position in a mercantile house remaining eight years, when he engaged in business for himself. At the age



HENRY PORTER BALDWIN.

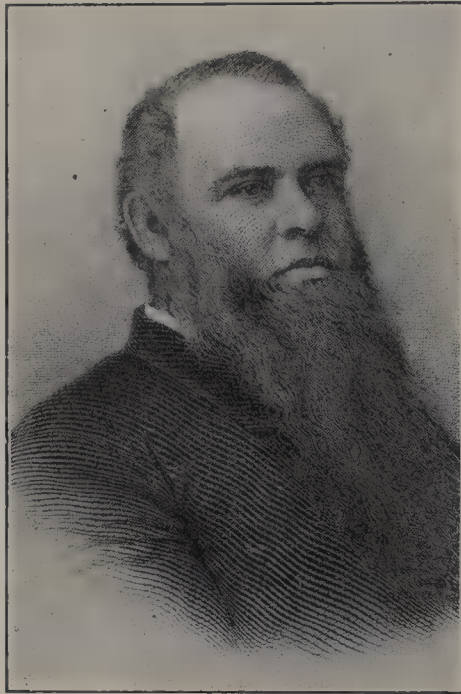
of twenty-four he came to Detroit, Michigan, and again became a merchant and later a banker as well. He was self-educated. He was an Episcopalian, a Whig and later a Republican. In 1860 he was elected to the state senate and was made chairman of the finance committee where he did excellent work in the management of the state finances when John McKinney left the treasury bankrupt. In 1868 he was elected governor by a large majority; re-elected in 1870. His first message dealt primarily with state finances and matters pertaining to the Agricultural College, Normal School and State University, all of which received very careful consideration. On the death of Zachariah Chandler in 1879, Governor Croswell appointed Ex-governor Baldwin United States Senator for the unexpired portion of his term of two years. In 1880-81 he was chairman of the Republican State Central Committee.

He died at Detroit, Michigan, December 31, 1892.

Children: Sybil, Katherine.

*The above information was furnished by Hon. William R. Bates, Flint, Mich.

*JOHN JUDSON BAGLEY was the son of John Bagley of Durham, New Hampshire and Mary M. (Smith) Bagley, of Sharon, Connecticut. He was born in Medina, New York, July 24th, 1832, and married Frances E. Newbury of Rutland, Ohio, at Dubuque, Iowa. John J. was educated in the public school. He was a Unitarian and a Republican; an extensive manufacturer of tobacco in Detroit; a member of the Detroit Board of Education about 1866; governor of Michigan 1872 to 1876; had much to do with building the State Capitol and seeing that it was paid for when completed. He was the man who changed the style of the state reports making them uniform on a plan still maintained in 1912. He was also the man, who, with four out



JOHN JUDSON BAGLEY.

of six of the members of the Board of Agriculture insisted on the resignation of Dr. Miles. He was a thorough business man in his appointments, and saw that the accounts of every state institution were properly kept.

He had an ambition to be United States Senator, but ill health prevented him from following up the subject with vigor.

He died July 27, 1881, at San Francisco, California.

Children: Florence, John W., Margaret, Helen, Katherine, Frances, Olive, Paul.

*CHARLES MILLER CROSWELL, son of John Croswell and Sally (Hicks) C., was born October 31, 1825, at Newburg, Orange county, New York. He married (1) Lucy M. Eddy, Feb. 1852. She was born April 1, 1831 at Marion, Wayne county, New York, educated and married in Adrian, Lenawee county,

Michigan, February, 1852, and died March 19, 1868. (2) Elizabeth Musgrove, who later married Thomas D. Merrill of Duluth, Minn.

To a great extent Mr. Croswell was self educated. He was a Presbyterian and a Republican; by occupation a carpenter and a contractor; a lawyer; mayor of Adrian; state senator; representative and speaker of the House, 1873; governor 1877-1881, two terms of two years each.

Mr. Croswell died December 13, 1886.

Children: (1) Harriet, Miss, a missionary (1912) Kodaikanal, Madura District, South India. (2) Lucy Croswell (Perkins).

*DAVID HOWELL JEROME was the son of Horace Jerome of Tompkins county, New York, and Elizabeth Rose (Hart), who came to Michigan in 1828. David H. was born November 17, 1829, at Detroit, Michigan; mar-



CHARLES MILLER CROSWELL.

ried on June 15, 1859, Lucy Peck, daughter of E. W. Peck of Pontiac, Michigan. He was an Episcopalian, in politics a Republican.

In 1853 he was mining in California; 1854 a merchant in Saginaw. For military record, see Appendix.

In 1862 he was elected state senator, and served six years; chairman of the committee on state affairs throughout that time.

In 1873 he was a member of the committee to revise the State Constitution; for several years he was on the board of Indian Commissioners, also trustee of the Michigan Military Academy.

He was governor of Michigan 1881-1883.

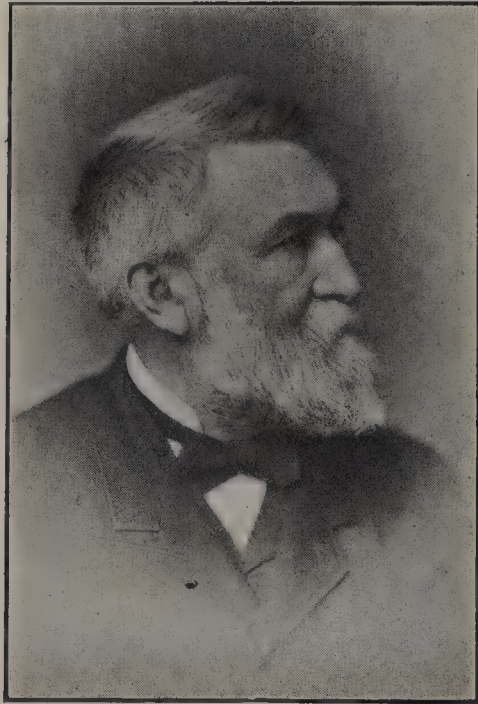
Governor Jerome died April 23, 1896, in a sanitarium at Watkins, New York.

Children: First and second died in infancy; Thomas Spencer, an attorney, Detroit, Mich.

In Dec. 1911, his son, Thomas, had been a resident of the island of Capris in the Bay of Naples, Europe.

*JOSIAH WILLIAMS BEGOLE was the son of William Begole, born in Maryland, and Eleanor Bowls B., of the same state. He was born January 20, 1815, in Livingston county, Michigan.

He married Harriet Miles, April 22, 1839. She was born at Homer, New York, Nov. 25, 1817. Mrs. Begole was a sister of Dr. Manly Miles, the first professor of agriculture at M. A. C. Mr. Begole was educated at Temple Hill Academy, Geneseo, New York. He was a Presbyterian; in politics a Greenbacker and later a Democrat; a farmer, then a lumberman in Flint,



DAVID HOWELL JEROME.

Michigan. A man who had many friends. Beginning in 1856 he was county treasurer for eight years; 1871 state senator; in 1872 congressman; in 1883-85 governor of Michigan.

He died at Flint, Michigan, on June 5, 1896.

Children: Mary Eleanor; William Manley, a student at M. A. C., 60-62; Frank Cushman, a student at M. A. C., 60-61; Charles Myron; Helen May B. (Cummings, Flint, Mich.), who furnished the above items.

*RUSSEL ALEXANDER ALGER was the son of Russell Alger of Connecticut and Caroline (Moulton) A. He was born at Lafayette, Medina county, Ohio, February 27, 1836. In 1861 he married Annette Henry of Grand Rapids, Michigan. They were Presbyterians, and Mr. Alger was a Re-

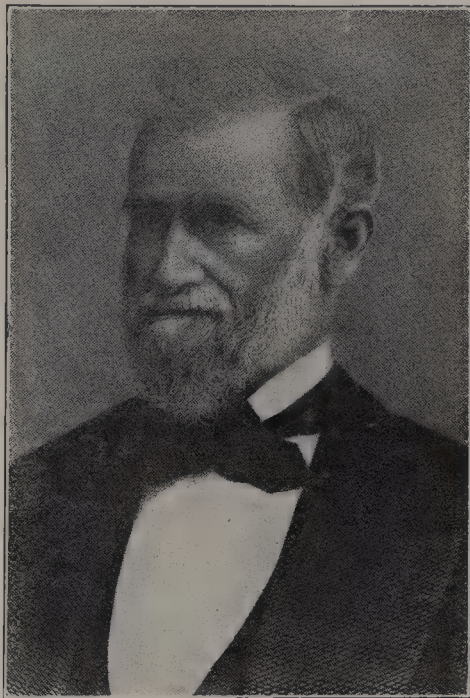
publican. He was admitted to the bar in 1857, to the bar of the Supreme Court of Ohio, 1859. See appendix E. for military record.

Extensively engaged in the lumber business, Detroit 1866, continuing for many years; president of the Alger, Smith & Company, beginning 1881, also president of the Manistique Lumbering Company, 1882; director in several banks; governor of Michigan 1885-87; secretary of war 1897; United States senator 1902.

He died at Washington, D. C., January 24, 1907.

Children: Russell A., Detroit, who furnished the above items; Frederick M.; Caroline (Mrs. Sheldon of Detroit); Fay A. (Mrs. Bailey of Harrisburg, Pa.); Frances A. (Mrs. Pike, Chicago, Ill.).

*CYRUS GRAY LUCE, son of Walter L. Luce of Connecticut, was born in



JOSIAH WILLIAMS BEGOLE.

Windsor, Ohio, July 2, 1824. His mother was born in Virginia. He married (1) Julia Ann Dickinson of Gilead, Branch county, Michigan; (2) Mrs. Mary E. Thompson, November, 1883. Mr. Luce was educated in the common schools of Ohio and Indiana with three months at Ontario Academy, La Grange, Indiana. He was a protestant and a Republican from the organization of the party. At the age of 24 he settled on a new farm in Gilead, where he lived until elected governor. As he urged others to do, he kept his farm fertile by judicious management. No man ever had a more abiding friendship at home and among his neighbors than did Governor Luce. He was proud to be considered industrious. Milo Campbell said: "He was exemplary. He was worthy of remembrance and of emulation in any home. He was temperate always. His intercourse with men was pure. His lips were clean. His spirit was buoyant and hopeful. He was honest

and truthful, congenial and open hearted. The warmth of his hand and his sincere welcome made all men feel that his hearth-stone was theirs also. His farm to him was the most loved spot on earth. He was ambitious and when elected to office attended to it with efficiency and economy. He was eleven times elected supervisor. While Mr. Luce could not properly be called an orator, he was certainly one of the most interesting and instructive of talkers. It may with truth be said that few men have spoken to so many different people in so many places in the state, upon so great a variety of themes and with such sustained interest as he. He was a good story teller, possessed a clear ringing voice."

Judge George L. Yapple, an opposing candidate for governor, said of him: "He was an honest, sincere and useful man. His private life was pure. The



RUSSEL ALEXANDER ALGER.

record of his public service is without spot or blemish. Perhaps the fittest tribute to the memory of the man is the universal recognition of his granite-like integrity and his aggressive earnestness. The maxims of the time-server, the demagogue and the mere politician found no place in his creed of life. He was honest, not as a matter of policy, but as a matter of principle. He was earnest because he was on fire with convictions. He was useful because he served his fellow men. No governor of the state of Michigan ever exhibited greater strength and independence of character or more strongly impressed his own personality upon the commonwealth. Honors came to him not because he sought them, but because he was prepared for them and merited them. He earned all his success by patient, intelligent preparation for the daily duties of life and honors came to him in recognition of the quality of the man. Governor Luce was a good, strong, sound

man, firm and fearless, just and generous, uplifted and inspired by pure and lofty ideals; there was in his makeup a 'fragment of the rock of ages.' In industry, zealous devotion to duty and efficient service for the people, his record has not been excelled in the history of our state. He was an optimist. In 1854, upon the organization of the republican party, he was elected to the house of representatives, going in this time with flying colors, though still young for the position, and four years later we find him acting as treasurer of Branch county."

Next came his election to the state senate, in which his impress for square dealing, economic measures, and rational reform, was distinctly felt.

He was a member of the State Board of Agriculture 1885-87; master and lecturer of his home grange; master of the state grange preceding his election as governor in 1887, serving two terms—four years."



CYRUS GRAY LUCE.

When Mr. Luce left the gubernatorial chair, he took up his residence in Coldwater, where he could keep an oversight of his Gilead farm, the Southern Michigan National Bank, of which he had been a director over a quarter of a century, the Coombs Milling Company, of which he was president, and the increasing business of Hugh Lyons & Co., in Lansing, in which he and his son, Homer, were largely interested. For diversion, there was his beloved grange, of which he had been an active member since he took a hand in its organization; the Twentieth Century Club, of which he was president at the time of his death; and his outlook upon the great political events of the last decade, in which his interest never palled. He was always in demand as a public speaker, for he was ready in words, profound in thought, and convincing in argument. Certainly no governor knew personally more men among the farmers than Cyrus G. Luce, and no one ever made so many speeches to which so few objections could be made.

He died at Coldwater March 18, 1905, a young man at the age of 81 years, soon after which the legislature conducted memorial exercises.

Children: Elmira J. (Mrs. John G. Parker of Orland, Indiana); Emery Greeley, on his father's farm; Dwight, died in infancy; Florence A.; Homer D. (Secretary of the Hugh Lyons Company, Lansing, Mich.).

*EDWIN BARUCH WINANS, son of John Winans and Eliza (May) W., was born May 16, 1826, at Avon, New York.

He married Elizabeth Galloway Sept. 3, 1855 at Hamburg, Michigan, where she was born. She was educated at Albion College, Albion, Mich.

Mr. Winans was educated at the same college. He was an Episcopalian and a Democrat. From 1850 to 1856 he was mining and banking at Rough and Ready, California; 1856 to 1894 farmer and land owner Hamburg,



EDWIN BARUCH WINANS.

Livingston county, Mich. He was a member of the legislature 1861 to 1863; member of the constitutional convention in 1867; judge of probate in Livingston county, Michigan, 1876 to 1880; member of Congress 1882 to 1886; governor of Michigan 1891 to 1893. Governor Winans died at Hamburg, Mich., July 4, 1894.

Children: George G. Winans, Hamburg, Mich., who furnished the items above given; Edwin Baruch, Captain U. S. Army.

JOHN T. RICH was born at Conneautville, Pennsylvania, April 23, 1841. He was the son of John W. of Shoreham, Vermont, and Jerusha (Treadwell) R., of the same place. He removed to Michigan in 1848, locating at Elba, Lapeer county; he was educated in the public schools, in Markston Academy and Lapeer high school. He married Lucretia M. Winship, of Flint, Michigan, March 12, 1863. She was from Avon, New York, educated in the

common schools and in an academy in Genessee county. He was a farmer from boyhood, prominent as a raiser of fine wool sheep; a Universalist and a Republican; supervisor for four years; representative in the legislature eight years; speaker of the house 1876-1880; state senator from January to April, 1880; member of the 47th Congress 1881-1883; commissioner of railroads 1887-1891; governor of Michigan 1893-97; collector of customs, Detroit, 1898-1906; collector Port Huron since January 9, 1909; state treasurer February to December, appointed by Governor Warner on the retiring of Frank P. Glazier; president State Sheep Breeder's Association; president Cyclone Insurance Co.

Besides farming he engaged in lumbering and dealing in pine lands; trustee in successfully closing a large lumber firm 1896, aided by Senator James McMillan, a personal friend; met with indifferent success inventing and manufacturing in connection with electric railways.



JOHN T. RICH.

Children: None.

Address: Elba, Lapeer County, Michigan.

*HAZEN S. PINGREE (1897-1901), was born in Denmark, Maine, August 30, 1840. He was the son of Jasper Pingree of the same place and Adaline (Bryant) Pingree of Maine. He was married February 28, 1870, to Frances Gilbert of Mt. Clemens, Michigan.

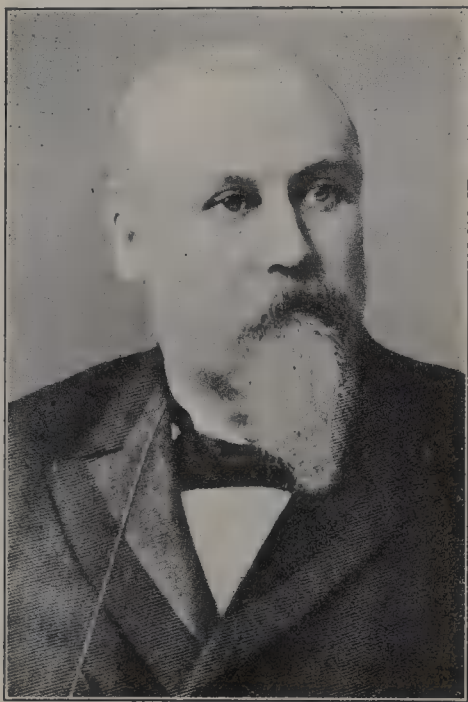
He had a common school education. He was active in the Baptist church, though never joined the organization; in politics a Republican. August 1, 1862, he enlisted in Company F of Massachusetts heavy artillery, was captured May 25, 1864, and confined in Andersonville prison for six months. He re-enlisted, was present at the surrender of General Lee, May 26, and

mustered out August 16, 1865. Shortly after, going to Detroit, he entered the firm of H. P. Baldwin & Co.; in 1866 began making shoes under the firm name of Pingree and Smith; in 1889 began his four terms of service as mayor of Detroit; 1896-1900 served as governor of the state. While mayor, there was a great deal said concerning his plan of inducing owners to grant poor people the privilege of growing potatoes on vacant city lots.

He died June 18, 1901, in London, England.

Children: Gertrude Elizabeth, Hazen S., Hazel Hope, (Mrs. Sherman L. Depew, Detroit).

*AARON THOMAS BLISS was born at Smithfield, New York, May 22, 1837. He was the son of Lyman Bliss and Ann M. (Chaffee) Bliss, both of Peterborough, New York.



HAZEN S. PINGREE.

He married Allaseba M. Phelps of Solsville, New York, on March 31, 1868.

Mr. Bliss' education was limited; began business as clerk in a drug store. He was a Methodist and a Republican. During the civil war he was captain of Company D, 10th New York cavalry.

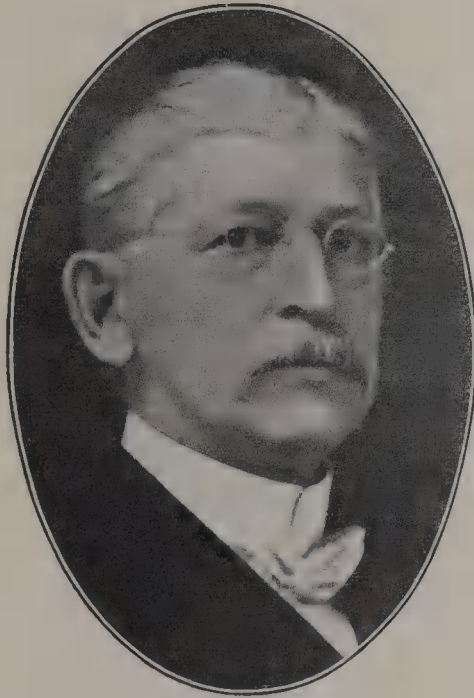
He was a lumberman, banker, merchant and managed farms at Saginaw, Michigan.

He was alderman, county surveyor, president of the board of education, state senator in 1882; member of the 51st Congress; department commander G. A. R. 1897; governor 1901-1905.

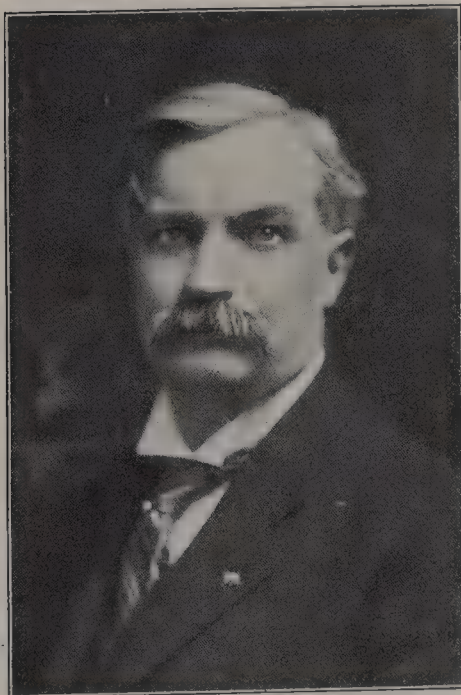
He died at the sanitarium of the Sisters of the Sacred Heart, Milwaukee, Wisconsin, September 16, 1906.

Children: None.

These items were furnished by his wife, April, 1912, Saginaw, West Side.



AARON THOMAS BLISS.



FRED MALTBY WARNER.

FRED MALTBY WARNER was born at Hickling, Nottinghamshire, England, July 21, 1865, and was adopted when three months old by Hon. P. Dean Warner in New York, later of Michigan, whose wife was Rohda E. (Botsford) W. He married Martha M. Davis, of Farmington, Michigan, who was born in 1867.

Mr. Warner was educated in the public schools of Farmington with part of a year in 1880 at the Agricultural College. In religion he is a protestant, and a Republican. From 1881 to 1905 he kept a general store; 1888-1911, and still (1913) at it, manufacturer of cheese; 1888-1893 president of Farmington, Oakland county; 1890-1911 member of school board; 1895-1899 member of the state senate; 1901-1905, secretary of state; 1905-1911 governor of Michigan, three terms.

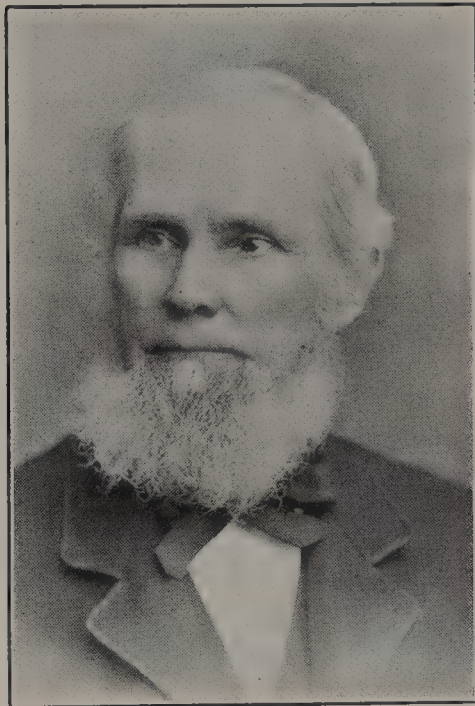
Children: S. Edessa; Howard M.; Harley D.; Helen R.

Address: Farmington, Mich.

MEMBERS BY AN ACT OF THE LEGISLATURE.

*DAVID CARPENTER, son of Clement Carpenter and Sarah (Gilmore) C., both natives of New England, was born in Potsdam, St. Lawrence county, New York, April 19, 1815. He married (1) in 1834, Thibza Pease, of Potsdam, New York, who was born May 22, 1812, and died December 22, 1839; (2) Mary L. Ellis in 1840, she died June 14, 1848; (3) Hepsibeth Worth of New York, in August, 1848. She died June 24, 1910, at Blissfield.

He was educated in the common school and the Academy at Potsdam. He was a member of the Methodist Episcopal Church and a Whig, later a Re-



DAVID CARPENTER.

publican. From Potsdam he moved to Blissfield, Lenawee county, Michigan, where he and his brother set up a store, also engaging in the real estate business which David C. continued until his death. He was also a banker. He served as a member of the State Board of Agriculture 1861-71. He was an honorable and prominent man, occupying offices not reported to the writer.

He died at Mt. Dora, Florida, Dec. 22, 1891.

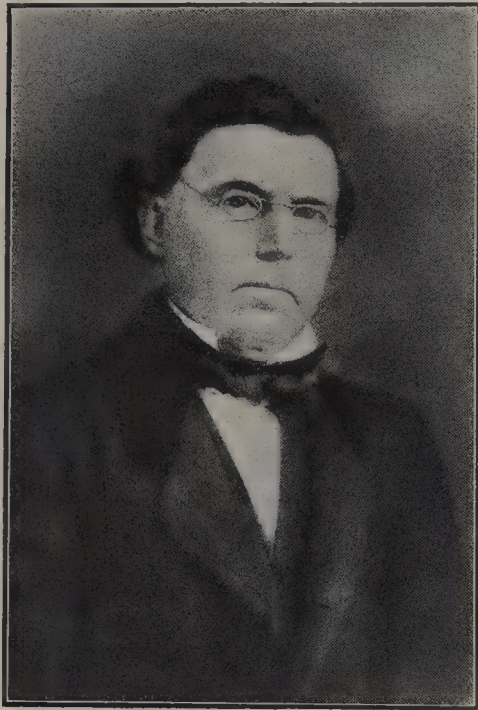
Children: None.

Items furnished by his niece, Elizabeth A. Webb, Blissfield, Mich.

*JUSTUS GAGE was born in DeRuyter, Madison county, New York, March 13, 1805. He married Matilda Tinkler 1836; received a common school

education with a short term in an academy, which was enough to stimulate his active mind from that time forward to become a diligent student. In 1822 he became a member of the Universalist Church and was soon after licensed to preach, which profession he continued through life, so far as his health would permit.

In the spring of 1837 he emigrated with family to Michigan, settling in Wayne township. He took a great interest in agriculture, was one of the early presidents of the Agricultural Society of Cass county; was a prominent member of the executive committee of the State Agricultural Society; in 1852 delivered the annual address before the State Agricultural Society at Detroit. His interest in education was second to none. In the fall of 1850 he was chosen director of the village school at Dowagiac and at once began to organize the union or graded school. He was active in organizing a Univer-



JUSTUS GAGE.

salist society and served as clerk as long as he lived. His virtues and pioneer sketches will long be treasured by the pioneers of his county. He was active in securing the passage of the law organizing the Agricultural College; was a member of the State Board of Agriculture by act of the legislature, serving from 1861 to 1869.

He died at Dowagiac, January 21, 1875, in his 69th year.

Children: Three sons, two daughters.

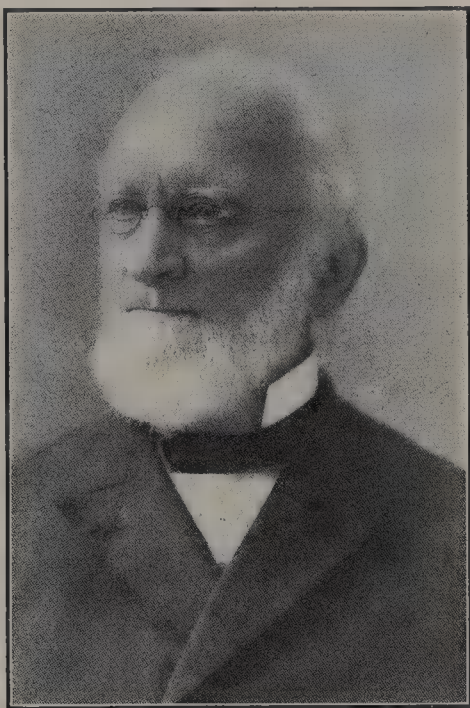
Information secured by Samuel Johnson, mostly from History of Cass County by Howard S. Rogers.

*PHILO PARSONS was the son of Lewis Baldwin Parsons and Lucine (Hoar) Parsons. He was born in Scipio, Cayuga county, New York, February 7, 1817.

He married Anne Eliza Barnum June 27, 1843, at Perry, New York. She was born at Danbury, Conn. He was educated at Gouverneur and Homer, New York.

He was at one time a Presbyterian but later a Congregationalist, always an active worker in the church, and in politics a Republican.

He was first in business at Perry, New York, with his father; in 1844 he moved to Detroit and took up the business of a wholesale grocer; established a private bank; for many years president of the First National Bank in Detroit; traveled in Europe; member of the common council, sent on first relief train to Chicago after the great fire in 1871; president of the Chamber of Commerce; president of the State Agricultural Society; trustee of Olivet College for 36 years; chairman of a committee to secure a design and have erected at the National Capital a statue of General Cass; active in securing



PHILO PARSONS.

Belle Isle Park; a large benefactor to home and foreign missions, aiding young men to the ministry, gave \$60,000 to Olivet College; presented the Rau library to the State University; could not enlist in the army because of personal defects, but gave much to aid the cause, banqueting the second regiment of Michigan Volunteers; member of the State Board of Agriculture by Legislature Act 1861-63.

He was loyal to his church, city and state to an extraordinary degree.

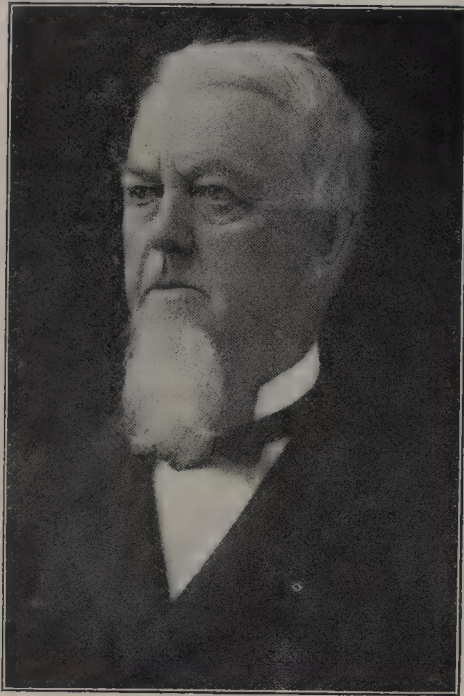
He died at Winchendon, Mass., January 12, 1865.

Children: Frances Eliza, widow of Doctor William F. Edwards; Lewis Baldwin; Edward Levi; Kate Eugene, deceased; Julia Norton, (Mrs. William E. Boynton); Mary Lucine; Grace Douglas, Greenpoint Settlement 58, Jane St., Brooklyn, New York.

JUDGE HEZEKIAH GRIFFITH WELLS was born at Steubenville, Jefferson county, Ohio, June 16, 1812, and received his education at Kenyon College. He was admitted to the bar in 1832, after studying in an office at Steubenville. His ancestors came from England to Maryland, and for several generations resided in that state; his parents removed to Ohio in an early day.

Judge Wells came to Kalamazoo county in 1833, and for two years lived on a farm in the township of Texas; he removed from Texas to Schoolcraft, and to Kalamazoo village in 1846. He was married in 1840 to Miss Achsah Strong of Kalamazoo.

Judge Wells held numerous school, township and county offices as long as he lived and was a member of every convention and commission for drafting or revising the state constitution. He received the title of "Judge" from his position as County Judge for Kalamazoo county. The confidence im-



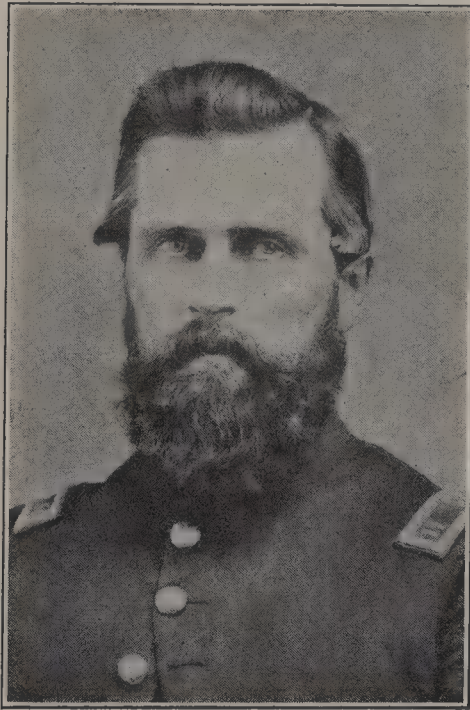
JUDGE HEZEKIAH GRIFFITH WELLS.

posed by the people in his judgment and integrity, was well exemplified by the fact that fully eighty per cent of the cases tried under his jurisdiction were without a jury, it being necessary then for the party desiring a jury to demand it. He served five terms as president of Kalamazoo village; was twice elected presidential elector, first in 1840, and again in 1860. He was appointed minister to the Central American States by President Lincoln, and consul to Manchester, England, by President Johnson, both of which he declined. He was named in the law which organized, in 1861, the State Board of Agriculture, and drew by lot the four years term up to the administration of Governor Begole; and he was for the greater part of this time president of the Board. He was for one year president of the State Agricultural Society, and for a number of terms was a member of the executive committee of that body; and was also for many years an active member of

the Board of Trustees of the Kalamazoo Female Seminary. He raised the 25th Michigan Infantry in 1862, and was one of the principal ones instrumental in organizing the State Pioneer Society of which he was president at different times.

President Grant in 1874, appointed Judge Wells presiding officer of the Court of Alabama Claims; and upon that occasion he resigned his position on the Board of Agriculture, but was induced by President Abbot to withdraw the resignation. Upon the re-organization of that court, President Arthur re-appointed Judge Wells as its presiding officer, he being the only man on the new court who was a member of the old one; failing health, however, compelled him to resign.

The Agricultural College owes much to Judge Wells' ability, and his zeal in behalf of the school, for its present high position and prosperity. He



SILAS ALLEN YERKES.

spent one whole season before the state legislature, when efforts were being made to have the College removed to Ann Arbor, and made a department of the University. He was confident that such a course would be detrimental to the best success of the College.

He also opposed the measure which at one time proposed to move the College from its situation in the woods to a cleared farm in the southern part of the state. It was under his supervision that all the large sales of lands granted by the state were made, which very materially aided the College in its early history.

Judge Wells had no children, but has always taken a deep interest in young men, and on numerous occasions has materially aided those endeavoring to obtain an education; and his assistance was often and willingly rend-

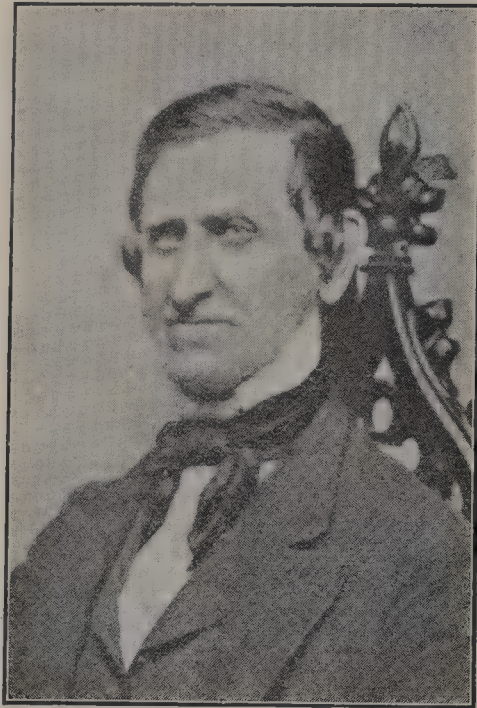
ered worthy ones in obtaining positions and securing a start in life. He was a jovial old gentleman, fond of jokes, and was a great story teller, and his company was always pleasant and lively. A life sized oil painting of him adorns the College reading room.

He was a life long Episcopalian, and died a communicant in that church. He was a tall man of fine personal appearance.

Judge Hezekiah G. Wells died at his home in Kalamazoo, April 4th, 1885.

Probably prepared by President T. C. Abbot.

*SILAS ALLEN YERKES was the son of Anthony Yerkes, born near Philadelphia, Pa., and Esther (Allen) Y., born in the State of New York. Silas was born near Manchester, Michigan, October 14, 1834; never married; was educated in the district school and at Hillsdale College; a Methodist and



CHARLES RICH, JR.

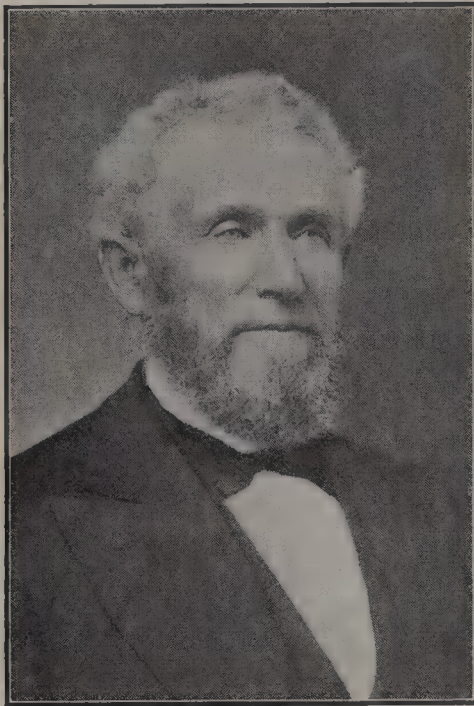
Republican. He taught school when 17 years old with good success; served his township two or three years as supervisor.

He was named a member of the State Board of Agriculture for Lowell, Kent county, in the original act in 1861, qualified and met two or three times with the Board, but in October resigned to enter the army. He entered as 2d Lieutenant of the 13th Infantry and became Captain, February 26, 1863; was wounded at Chickamauga, September 19, 1863; breveted Major for meritorious conduct and discharged when no longer able to serve as a soldier, May 15, 1865. He was a farmer, residing at Vergennes, Kent County, Michigan. He died at home October 26, 1865.

Most of these notes were furnished by E. L. Bennett, R. D. No. 46, Lowell, Kent County, Michigan. He was in the regiment under Yerkes and later married the sister of Mr. Yerkes.

*CHARLES RICH, JR., son of Charles Rich, Sr., and Molly (Watts) R., was born July 30, 1802. He married Elizabeth Treadway, March 18, 1827.

From the time he was married he was a successful tenant farmer for ten years, when he sold out and moved to Conneautville, Pa., where he engaged in keeping a store for ten years (1847) when his property was gone. He moved to Lapeer, Michigan, with the purpose of going onto a farm in the woods; while waiting for the log house he lost both of his children by typhoid fever, he and his wife both recovering. In 1848 they moved into the primitive log house. In 1856 he was elected county clerk and register of deeds and moved to Lapeer where he lived until his death in 1872. While living in Lapeer he held the office of judge of probate and from 1861 to 1867 was a member of the State Board of Agriculture. He took great interest in the College. The timber from the last farm was cut off at a profit and left



ABRAM CLIFFORD PRUTZMAN.

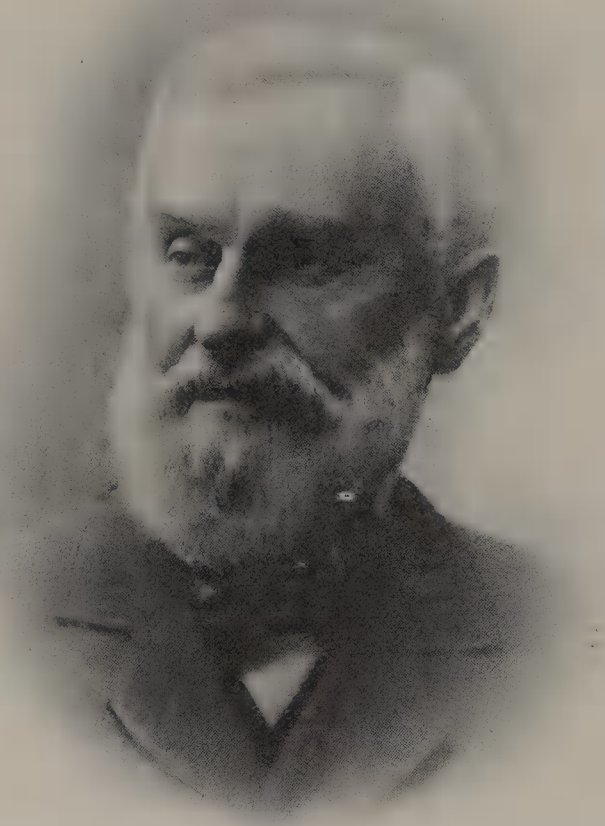
him in comfortable circumstances. This information was obtained from his nephew, Governor John T. Rich.

Children: Mary Elizabeth, deceased; Charles Napoleon, deceased; infant daughter died April 1845; Mary Jeanette.

*ABRAM CLIFFORD PRUTZMAN was the son of Joseph and Maria Prutzman. He was born in Columbia county, Penn., March 6, 1813, and when a lad moved to Danville, Penn. He married Mary L. Phillips, July 14, 1836. She was born in Dauphin county, Penn., Nov. 5, 1816.

Mr. Prutzman was educated in the common school. In religion he was a Presbyterian, in politics a Whig, later a Republican. When he was fourteen he was indentured by his parents as an apprentice to Colb & Donaldson to learn to become a merchant and remained four years. He then went to

Pottsville, Schuylkill county, Penn., where he followed the same business until the fall of 1834, when he formed a co-partnership with his brother-in-law, Edward S. Moore, and removed to St. Joseph county, Michigan, sending their goods around the lakes to the mouth of the St. Joseph river. He went into business in Prairie Ronde, Kalamazoo county, where they remained two years, then removing to Three Rivers and a year later leased the flouring mills of Smith & Bowman, purchasing the same in 1840, and continuing until 1859, when they dissolved partnership, Mr. Prutzman becoming a merchant until 1867 when he retired. He was state senator,



ADONIJAH STRONG WELCH.

1869-75, and for ten years, 1862-73, he was a member of the State Board of Agriculture. He was elected to fill a vacancy on the resignation of Mr. Yerkes. He died Jan. 2, 1899, at Minneapolis, Minn., age over 85 years.

Children: Joseph E.; John F.; Edward M.; Margaret M.; Abraham C., '67, 412 Garden Street, Three Rivers, Mich. (1912.)

*ADONIJAH STRONG WELCH was born at East Hampton, Connecticut, April 12, 1821. He married (1) Eunice Buckingham, at Mt. Vernon, Ohio, April 12, 1851; (2) Mary B. Dudley, February 3, 1868.

He prepared for college at Romeo Academy; graduated in the University of Michigan, 1846, with the degree of A. B.; studied law with Lothrop and Duffield. He was principal of the Union School in Jonesville, Michigan; principal of the State Normal School, Ypsilanti, Michigan, 1851-65; member of the State Board of Agriculture, 1863-66; president of the State Teachers' Association. He went to Florida to recruit his health, and was elected United States Senator of that State in 1867. In 1868 he was elected president of Iowa Agricultural College, later called Iowa State College, and inaugurated March 17, 1869.

He died, March 13, 1889, at Pasadena, California, and was buried in the college cemetery at Ames, Iowa.

There were two children by the first wife, one a graduate of the Veterinary College, afterward located in Kansas; and a daughter married, now deceased.



ORAMEL HOSFORD.

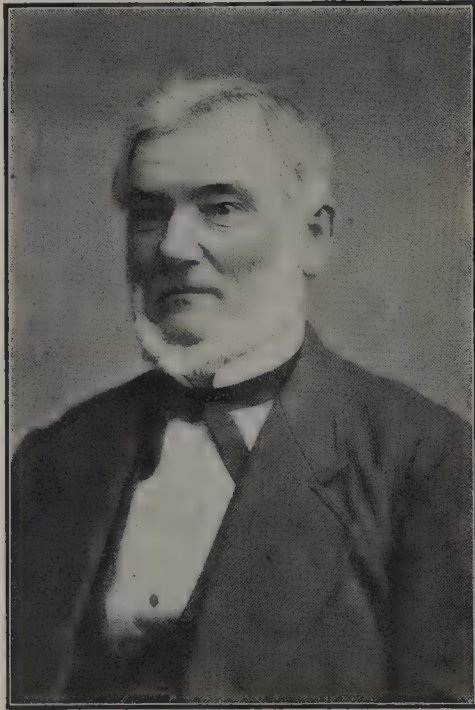
In December, 1911, Dr. Welch's second wife, Mrs. Mary B. Welch, was living at 1138 West 29th St., Los Angeles, California.

*ORAMEL HOSFORD, son of William Hosford and Lina (Ellis) Hosford, both born in Thetford, Vermont, was born at Thetford, Vermont, May 7, 1820. He married Abbie H. Allen, a native of Mansfield, Massachusetts. She graduated at Oberlin College, Ohio, and was married there. Mr. Hosford graduated from Oberlin in the literary course, in 1843, and in the theological course, in 1846. He was a Congregationalist and a Republican. Soon after marriage he and his wife went to Olivet, Michigan, to help found a college. He heard the first recitation of any one in Olivet, where he was Professor of Physics from 1844 to 1890. He was state Superintendent of Public Instruction four terms, 1865-73; member of the State Board of Agriculture, 1866-75. He died at Olivet, December 9, 1893.

I copy a few sentences gleaned from comments of his numerous friends: "I never saw him discouraged." "He was ordained to the Christian ministry in 1858." "He was the second president of the village of Olivet." "No untoward action ever marred the harmony of his beautiful and magnificent character." "He was always regular in his modes of life, thoroughly temperate in all his habits, and upright in all his conduct." "He was a man who loved his home." "He was the best classroom story teller I ever knew." "His hold upon the students was remarkable."

"The little band with their wagons and horses, covered wagons containing all their household goods, with a flock of cattle, started out in a little procession from Oberlin for the wilds of Michigan to found Olivet College."

Children: Elizabeth Lee (deceased); Mary Helena (Mrs. E. S. Noble, 134 20th St., Toledo, Ohio).



SAMUEL OLIVER KNAPP.

*SAMUEL OLIVER KNAPP was the son of Nathan Knapp and Eliza (Grinell) Knapp, both natives of Massachusetts, who had a family of twelve children. Mr. Knapp was born February 23, 1817. In company with Governor Payne he manufactured woolen goods. He married Sarah Balch at Northfield, Massachusetts, and moved to Michigan and made considerable money in mining copper and dealing in mines in the Upper Peninsula; in the late fifties he moved to Jackson, Michigan, where he improved a very fine place, one of the finest in the state, in 1874. He was self educated in addition to a limited schooling, and learned some botany, horticulture, mineralogy and geology. He built and managed with great delight and success a small greenhouse adjoining his dwelling. He was one of the founders of the first Methodist Church of Jackson and was most generous in helping to build the church in 1866. He was the founder of Bay View, building the first

cottage there in 1875. He gave most of his fortune to the church which he founded.

He died at Jackson, January 6, 1883; his wife died December 12, 1899.

He was a very generous and upright man with a positive will of his own; rather slow of speech and somewhat reserved.

He served as a member of the State Board of Agriculture, 1867-73, by appointment of Governor H. H. Crapo.

There were no children.

The above items were chiefly furnished by a niece of S. O. Knapp, whose address (1911) was, Mrs. Ella Knapp Watts, Jackson, Michigan.

*JAMES WEBSTER CHILDS was born at Henniker, New Hampshire, the



JAMES WEBSTER CHILDS.

youngest of ten children, one of whom now occupies the "old homestead," the home of Mr. Child's father and grandfather.

Mr. Childs completed his preparation for a college classical course in New Hampshire, but was forbidden to take the course by his physician. Most deeply disappointed in his longing for a college education he followed some of his elder brothers to Michigan in 1848, having the same year married Miss Lucy A. Hubbard, Claremont, New Hampshire, and bought the farm in Augusta, Washtenaw county, upon which he has always lived. He united with the Congregational church in his native town at 15 years of age, and aided in establishing the Congregational church in Augusta in 1854. From that time until his death he has been superintendent of its Sabbath-school. Tender and affectionate as a woman, he was constantly busied for the improvement of all. Until prescribed for him in his last illness he had never tasted intoxicating liquors, and was an ardent advocate of temperance. He entered heartily into the grange movement as being a highly educating

social force. He interested himself in the schools, in agricultural associations and fairs equally warmly and efficiently, whether for the neighborhood or for the whole state, and held many offices of trust and honor in them all.

Mr. Childs served two terms in the House of Representatives and four in the Senate, taking a prominent part in all public measures, and carrying into politics the high sense of honor and conscientiousness for which he was known in private life. He was a member of the Republican party which he had helped to form. He was a member of the State Board of Agriculture for two terms, 1869-1882, appointed by Governor Baldwin and Governor Bagley and served about two years under the appointment of Governor Jerome.

The above biography was chiefly taken from the report of President Abbot, 1881-2.

Children: One by adoption.



GEORGE WILBUR PHILLIPS.

*GEORGE WILBUR PHILLIPS, son of Ira Phillips of Lima, New York and Martha Day of the same place, was born at Lima, New York, in July 17, 1830; died at Romeo, May 2, 1902. He married Lydia E. Sterling of Romeo, Michigan, Feb. 10, 1856. She was born at Romeo, Michigan, December, 1834. Mr. Phillips and wife were educated in the common schools of Macomb county, Michigan. He was a Congregationalist and Republican, a farmer at Romeo 1850 to 1902. He was seven times president of his county Agricultural Society, 1858-1870; twice president of Armada Fair Association, 1872-1873; president of the State Agricultural Society, 1880-1882; member of the State Board of Agriculture, 1871-1883. He was one of the original members of the State Agricultural Society and made one of the chief exhibits in live stock at the first state fair held in Detroit in 1849.

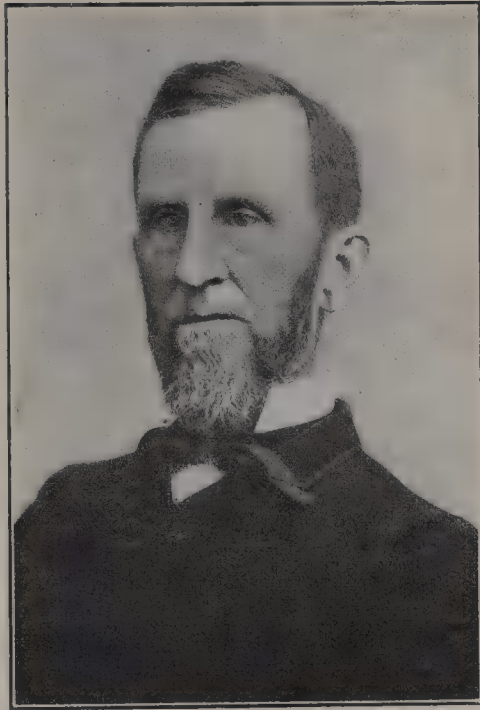
Through his instrumentality, to some extent, the system of farmers'

institutes were established in 1875, the first institute being held in his home village, Armada. He was an efficient and faithful member of the State Board, a firm friend and a good citizen.

Children: Conie E. Toney, Geo. W., C. J., Fannie A. Phillips, deceased, C. I., John A., Minnie Phillips Beach, H. M.

*FRANKLIN WELLS, son of Joseph Wells and Lucy (Hollister) Wells, was born April 19, 1823, at Salem, Washington county, New York. The name of his wife was Helen Mar (Briggs).

He was educated in the public schools; in religion a Congregationalist; in politics a Republican. In 1837 he moved to Constantine, Michigan; 1838-1842 clerked in a store; 1842 to 1871 kept a general store; from 1871 to his death in 1903, took great interest in the management of his farms. He was



FRANKLIN WELLS.

postmaster in 1861 for part of a presidential term; in 1895 again postmaster. In 1873 he was appointed by Governor Bagley a member of the State Board of Agriculture.

There were nine children: Helen M., Willis H., Jeannette L., Fanny W., Louisa S., Mary B., Jesse, Franklin H., Antoinette.

From 1878 to 1890, he was agent for St. Joseph county for the State Board of Charities and Corrections.

For a time he served as a member of the State Central Republican Committee.

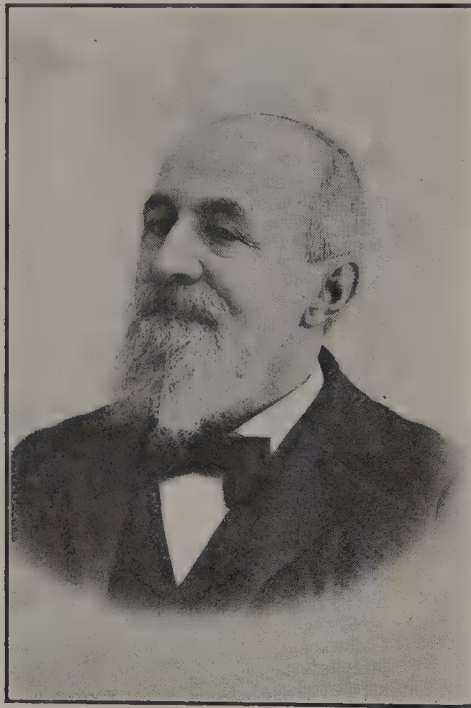
Mr. Wells died July 3, 1903.

Governor John J. Bagley appointed Mr. Wells a member of the State Board of Agriculture with especial reference to his business ability and his fine record as a citizen. By appointment and election to fill vacancy he served

over thirty years, during which time he was faithful to his trust, and for many years he was president of the Board of Agriculture. He was a genial man, making many friends and few enemies. M. A. C. people can judge of his appearance somewhat by an oil painting shown in the Library.

President Abbot said of Mr. Wells: "As chairman of the College Committee on Finance he seems to me to be as nearly perfect as a man can be. His acquaintance with business affairs is extensive and accurate to a remarkable degree. He keeps in mind the state of the accounts of each department of the College, solves the perplexities that arise in the complicated business of a school that is also a farm, and audits every account that is paid by the institution. I do not believe his private business receives a more careful scrutiny than do the affairs of the College.

"I know better than any one else what this means. For ten years previous



AARON SMITH DYCKMAN.

to Mr. Wells' advent on the Board each officer brought his accounts in person to me to have them audited. We ran through them item by item, and I spent a full half of the long winter vacation in classifying these items and drawing up one full statement of the College receipts and expenditures. A new system of accounts and of auditing throws this burden,—a great one,—upon the Secretary of the Board and the Chairman of the Finance Committee. Mr. Wells has a quick appreciation of the beauty of good stock and good farming, and takes a keen interest in every department of the College."

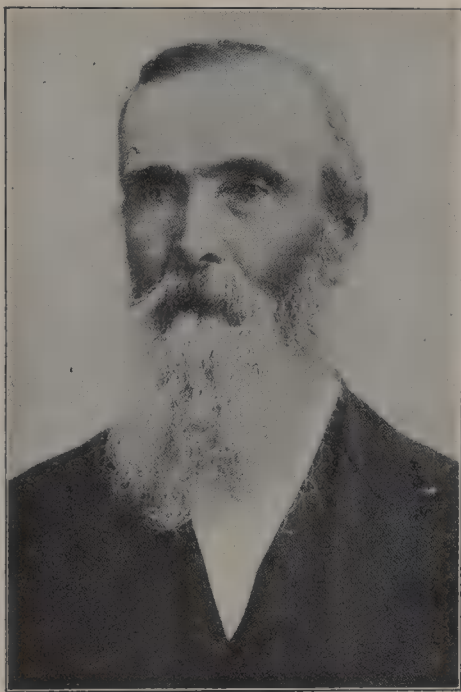
*AARON SMITH DYCKMAN was the son of Every Brown Dyckman of Greenbush, New York, and Harriet (Hinckly) D. He was born February 16, 1826, at Clay, New York. He married Amorita Blood of South Haven, Michigan, February 25, 1856. She was born in Utica, New York, in 1836. Mr. Dyck-

man was educated in the common school and at Kalamazoo College; attended the Congregational church and voted the Republican ticket. In early life he ran a saw mill and engaged in the lumber business; was a most successful grower of peaches and some other fruits; served as county treasurer 1860-1864; president of the State Pomological Society; member of the State Board of Agriculture 1873-1879.

He died December 12, 1899, living for much of his active life at South Haven, Michigan.

Children: Evert S., South Haven, Michigan; Hattie, Claude.

*MILTON JACKSON GARD was born March 11, 1824, in Union County, Indiana. His father's name was Jonathan Gard of New Jersey and his mother's name was Elizabeth (Bishop) of South Carolina. Mr. Gard mar-



MILTON JACKSON GARD.

ried (1) Olive Green in 1847; she died in 1857; (2) Susan Fox in 1864. He was educated in the common schools; was a Universalist and Republican.

He taught school for a number of terms; ran a saw mill six years; engaged in farming; was supervisor for a number of years and held most every other township office. He was active in Volinia Farmers' Club and lived in a fine farming country. He contributed an article for the report of the Board of Agriculture in 1870 on Farm Management and Breeding Hogs.

He was appointed by Governor Bagley a member of the State Board of Agriculture 1875 and served six years.

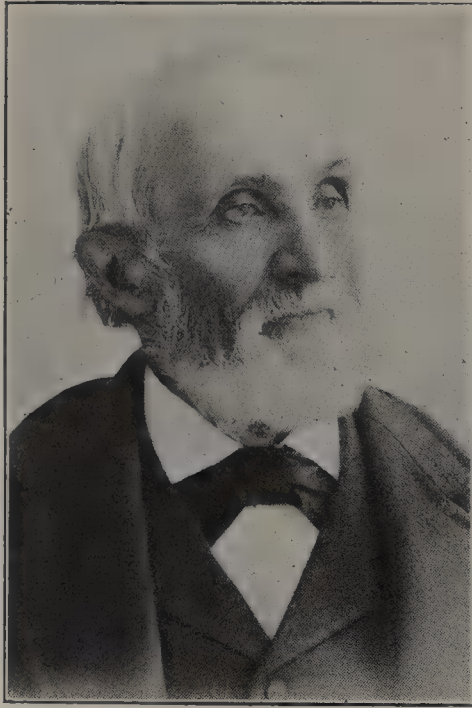
He died July 29, 1900, in Volinia Township, Cass County, Mich.

Children: By first wife, George W., R. F. D. No. 5, Cassopolis, Michigan, (furnished data); by second wife: Mina, Bertha.

Address: Cassopolis, Michigan.

HENRY GRAHAM REYNOLDS, 1879-1885. See Secretaries.

*THOMAS DUSTIN DEWEY was born at Broomfield Center, Oakland county, Michigan, February 22, 1823. His father's name was Appollos Dewey, Jr., of Vermont; his mother's name was Abigail (Wetmore) Dewey of Connecticut. Mr. Dewey married (1) Philena Gould, of Cayuga county, New York, on April 10, 1849; she died in 1885. (2) Elizabeth Cramer, November 2, 1887. She died June 29, 1904. Mr. Dewey was educated in the common schools. He was a Presbyterian and a Republican. He was a merchant's clerk, later a miller at Owosso. In company with Mr. Stewart, he was a breeder of fine horses, including Jerome Eddy sold for \$25,000. He was mayor of Owosso; chief of the fire department; interested in fairs; member of the State Board of Agriculture 1881-87.



THOMAS DUSTIN DEWEY.

He died March 22, 1906. Mr. Dewey was an honorable and very useful man.

Children, by Elizabeth: George Cramer Dewey, 159 Greene Avenue, Detroit, Mich. (1911).

*WILLIAM BARBER MCCREERY was born August 27, 1836, at Mount Morris, New York. He was the son of Reuben McCreery, who lived near Rochester, New York and Susan Barker McCreery of South Wales, New York.

He married (1) Ada Birdsall Fenton, at Flint, Michigan, Dec. 14, 1864. She was born June 5, 1838, at Fenton, Michigan, and died in 1884. (2) Genevieve Decker, at Flint, Michigan; she died in 1899. Mr. McCreery moved to Genesee county, Michigan, with his parents in 1838. He was

educated in the common school and at Nutting's Academy, Lodi, Michigan. He was admitted to the Bar in 1860. He was vestryman in St. Paul's Protestant Episcopal Church at Flint; a Republican, and delegate to the National Convention in 1884.

After the war he was one of the firm Judd, McCreery and Avery, owning a planing mill at Flint; a founder of Citizens National Bank; one of the builders and a director of the Chicago and North Eastern Railway; one of original directors of Flint waterworks; mayor of Flint, 1865-66; U. S. Collector of Internal Revenue for the Eastern district of Michigan, 1871-74; state treasurer 1874-78; member of the State Board of Agriculture 1882 to April 8, 1890; U. S. Consul to Valparaiso, Chili, 1890-93.

He died at Flint, Dec. 9, 1896.

Children: Fenton Reuben, of Flint, who kindly furnished the above



WILLIAM BARBER McCREERY.

biography; Adelaide Fenton (Mrs. Jerome H. Remick, of Detroit), Katherine (Mrs. Matthew Davison, Jr., of Flint).

*ELIJAH WALDO RISING, son of Sylvester Rising, was born October 8, 1822, in Franklin county, New York. In 1843 he married Mary Ann Drake of Onondaga county, New York.

Mr. Rising's education was limited. In 1848 he and his wife moved to Richfield, Genesee county, Michigan. In 1871 they moved to Davison in the same county, where he planned the village of that name. For a number of years he was awarded the first prize on his farm as the best in the country. He was a member of the executive committee of the State Agricultural Society; president of the County Agricultural Society; member of the legis-

lature one term; first president of the village; postmaster appointed by President Cleveland during his first term; served as a member of the State Board of Agriculture 1883-89 by appointment of Governor Begole. He belonged to the Methodist Episcopal church, in politics a Democrat. He died at Davison, April 30, 1893. He was an honorable and public spirited citizen.

Children: Loclema, Augusta, Ellen, Estella adopted, now Mrs. C. H. Howes, 381 E. Broadway, Mt. Pleasant, Michigan.

*HENRY CHAMBERLAIN was the son of Moses Chamberlain of London, New Hampshire, and Mary Foster Chamberlain of Canterbury, of the same state. Henry C. was born March 17, 1824, at Pembroke, New Hampshire. He



ELIJAH WALDO RISING.

married (1) Sarah J. Nash, Jan. 1851, who died June, 1852; (2) Rebecca Devanter Amos of Deleware county, Ohio, at Marion, Indiana, November 19, 1856.

Mr. Chamberlain was educated in the common school with a year at Pembroke Academy; read Blackstone when thirteen years old and through life was an extensive reader.

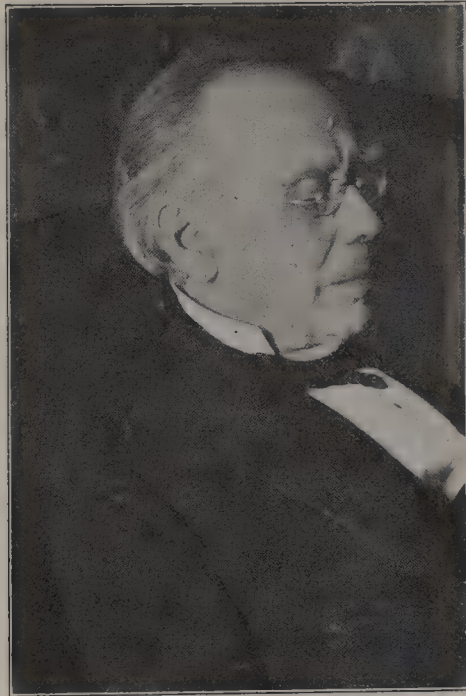
He was a Congregationalist and a Democrat. In 1843 the family settled in New Buffalo, Michigan, later separated and known as Three Oaks in southwestern Michigan, where he managed a country store and was keeper of the postoffice; served three years as supervisor; mail agent; representative in the legislature; one of the founders of the State Agricultural Society in 1849; cleared during his life more than 1000 acres of land; justice of the peace; candidate for governor in 1874; for congress in 1868, 1870, 1876, but not

elected; notary public 1846 to the close of his life; member of the State Board of Agriculture 1883-89 and 1891-97; delegate to three National Democratic conventions and attended two others; a prominent member of the Masonic fraternity; in 1872 serving as Grand Master. His father preached Christianity, temperance, anti-slavery, honesty and morality.

Henry Chamberlain died at Three Oaks, February 9, 1907.

Children: By first wife, Henry Nash; by second: Mary Louise, (Mrs. E. K. Warren); Rebecca Belle, (wife of Lee Chamberlain); Paul Mellin, (1911) Engineer in Marquette Bldg., Chicago, Ill.

*CYRUS GREY LUCE, 1885-89. See Governors.



HENRY CHAMBERLAIN.

GEORGE BYRON HORTON, son of Samuel Horton of Lincolnshire, England, and Lucina A. (Perkins) Horton of Herkimer county, New York, was born April 17, 1845, in Medina county, Ohio. He married Amanda Bradish of Lenawee county, Michigan, who was educated at the Raisin Valley Seminary. Mr. Horton received his education in the common school and one term each at Adrian College and Hillsdale College. He is an unaffiliated Christian and is a Republican. He has been farmer and manufacturer of cheese at Fruit Ridge from his youth to the present time; member of the State Board of Agriculture from 1887 to November 9, 1888, when he resigned; postmaster of Fruit Ridge; member of the State Constitutional Committee, 1908; state Senator in 1891; member of the Board of Tax Commission and State Board of Assessors since June, 1911; Master of Fruit Ridge Grange, 1870-90; Master of Lenawee county Grange, 1875-1881; Master of the State Grange, 1891-1909. Many years ago, an influential neighbor remarked: "Keep your eye on George

Horton, you will hear from him before long." Both of his boys graduated at the Agricultural College.

Children: Alice Louise, Norman B., '02; Samuel W., '08; Carolyn L.

Address: Fruit Ridge, Michigan.

CHARLES WILLIAM GARFIELD (1887-99), son of Samuel M. Garfield, a farmer from Batavia, New York and Harriet E. (Brown) Garfield of Peterborough, New Hampshire, was born March 14, 1848, at Milwaukee, Wisconsin. He married (1) Alice I. Rockwell, who died at Grand Rapids, January 15, 1892; (2) Jessie A. Smith of Grand Rapids, who was born in Scotland. Mr. Garfield was a graduate of the high school of Grand Rapids; graduate of the Agricultural College in 1870 with the degree of B. S.; 1873, M. S.,



GEORGE BYRON HORTON.

He is a Christian gentleman, in politics for a time a Republican, later a Mangwump or Insurgent.

He was foreman of the Gardens, 1874-1878; secretary of the State Horticultural Society 1877-87, making first class reports; a director of the first State Forestry Commission, 1888-92; president of the Second Forestry Commission; member of the State House of Representatives 1881-82; president of the Grand Rapids Savings Bank at least since 1890; member of the State Board of Agriculture 1887-99; very active in local and state and national horticultural societies, and either president, secretary or director of many corporations. He gave thirty acres for a city park; the most active man in Grand Rapids in promoting civic improvements of all kinds. Mr. Garfield declined to name many of these, says he is mostly a farmer—a tickler of the soil. They have one adopted daughter—now Mrs. A. J. Decker, of Ann Arbor, Michigan.

OSCAR PALMER, son of Lorenzo Palmer, who was born in Charron, Connecticut, and Ruth (Wells) Palmer, who was born in the same place.

Mr. Palmer was born at Westfield, Chatauqua county, New York, November 8, 1841. He married Nellie E. Taylor, Hudson, Michigan, October 25, 1864. She was born near Hudson, February 13, 1841, and was educated there. Mr. Palmer was educated in the common schools of Hudson, and for a short time was a student in the Agricultural College; took a medical course at the University of Georgetown, D. C., graduating in 1863 with the degree of M. D.

He is a Protestant and a life-long Republican.

He was acting assistant surgeon of the 2nd U. S. S. at the time of graduation, and then commissioned by Governor Blair for the same place, serving



CHARLES WILLIAM GARFIELD.

till October 25, 1864, making three years and four months of service; located at Jonesville, Michigan, December 1864, practicing for five years medical surgery; engaged in manufacturing and real estate till 1875; from 1875 to 1880, engaged in newspaper work, as editor of the Jonesville Independent, and farming; moved to Grayling 1880, erected a planing mill, and ran it for three years; from 1878 to 1883 devoted all his spare time to the study of law; admitted to practice in state and U. S. courts in 1883; 20 years between then and now (1911) served as Prosecuting Attorney and Circuit Court Commissioner Crawford county; was Register of U. S. Land Office under Harrison 1889 to 1893, beheaded by Cleveland 1893, reappointed by McKinley in 1897; member of the state legislature 1883-85; member of the State Board of Agriculture 1889-91. He still resides at Grayling, Michigan.

Children: One child was born but died soon after birth.

ASA CHAPIN GLIDDEN was the son of Jehiel Glidden of New Hampshire and Harriet (Chapin) Glidden of Onondaga county, New York. He was born June 21, 1835, near Batavia Village, Genesee county, New York. He married (1) Esther Gould, of Orange county, New York, on March 12, 1868. She was born 1843 and died March 17, 1890; (2) Loretta Bicknell of Cedar Springs, Michigan, who was educated in the high school and taught school for some years.

Mr. Glidden was educated in a common school previous to 1852, when the family moved to Paw Paw, Michigan, where he attended high school; taught district school eleven winters.

He is a Congregationalist and a Republican from Fremont to Taft. He managed his mother's farm; served as township school inspector for some



OSCAR PALMER.

years; supervisor one year; secretary of the County Agricultural Society six years; secretary of the County Insurance Company two years; president of the First Michigan Association of Agricultural Societies continuing for three years; 1884 for four years an editorial contributor to the *Michigan Farmer*; editor of the *Grange Visitor* for three years; member of the State Board of Agriculture 1889-1895; correspondent of several papers; in 1895 sold out and moved to Cedar Springs, Michigan, where he works his farm.

Children by second wife: Harold Bicknell, Galen McKee.

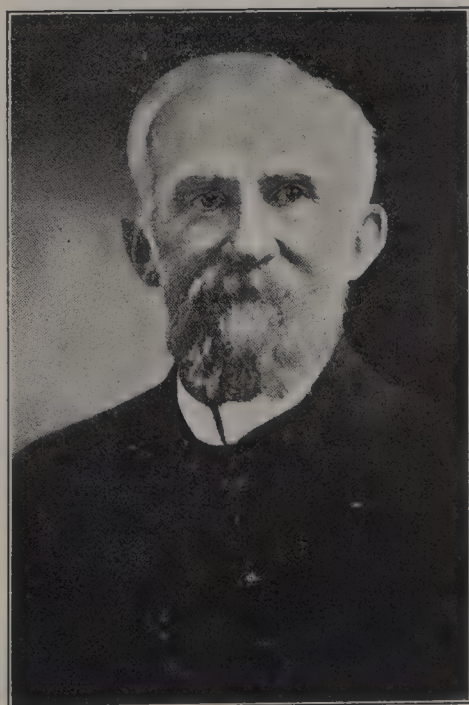
IRA HOWARD BUTTERFIELD, 1889-

Resigned July, 1893. See Secretaries.

HORACE COOLEY SPENCER, son of Chester Spencer of Hartford, Ct., and Abigail Badgley of Cortland, New York, was born July 27, 1832, at Cortland,



ASA CHAPIN GLIDDEN.



HORACE COOLEY SPENCER.

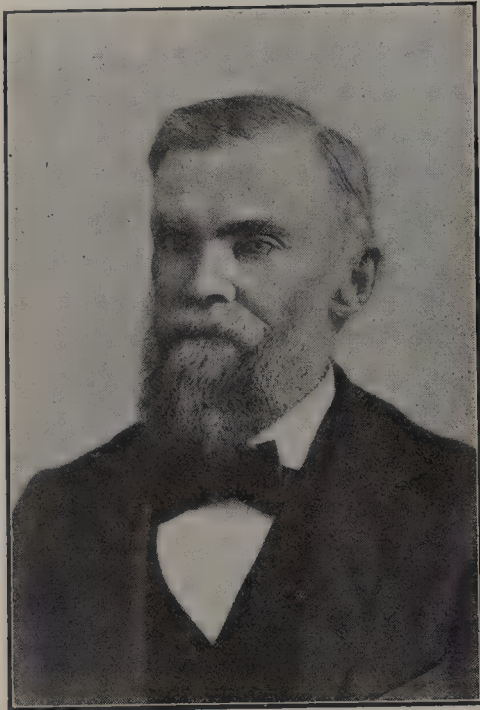
New York. He married Catherine C. Morris, formerly of Jordan, New York.

Mr. Spencer was educated in the common school and Springville Academy. He is a Universalist and a Republican.

From the State of New York he moved to Flint and engaged in the hardware business; later in banking. He was a member of the state Senate 1885-87; mayor of Flint in 1908; member of the State Board of Agriculture 1890, resigning December 26, 1890. With more intimate acquaintance doubtless the writer could say more of this estimable man.

One child: Mrs. Carrie A. Bishop.

*EDWIN PHELPS was born in Pittsfield, Massachusetts, April 7, 1828. He was the son of Elnathan Phelps, of Pittsfield, Mass., and Clarissa (Colt) Phelps, of Richmond, Massachusetts.



EDWIN PHELPS.

He married (1) Mary Irish of Oakland county, Michigan, June 16, 1858, who died in July 1870; (2) Delia Kimball, Nov. 12, 1874, Pontiac, Michigan.

His ancestors lived in Connecticut, and were religious, energetic and ambitious. When five years old Edwin went to Michigan with his father where they were pioneers. He attended the common school in a log house, later went to an academy, taught by R. C. Kedzie, later a professor at the Agricultural College in Rochester, Oakland county, Michigan.

At the age of 21 he went overland to California for gold, coming back in two years with \$7000, with which he bought his father's farm, called *Maple Place*. He made it the show place of that region. He was the first man in the state to import Hereford cattle; he also imported Holstein cattle, built a silo and in other respects was a thorough up-to-date farmer.

He was a Universalist and a Democrat; was economical, generous, in-

dustrious. He was for the last ten years of his life crippled with rheumatism.

He was justice of peace for twenty years; prominent in political circles; a member of the executive committee of the State Agricultural Society; appointed a member of the State Board of Agriculture by Governor Winans in 1891 and resigned January, 1895.

He died May 22, 1904, at Pontiac, Michigan.

Children: Mary, Jessie, by first wife; by second wife: Clara Phelps Smith, Ella Phelps Mattison, Edwin Phelps, Jr.

Information furnished by Jessie Phelps, long a professor at the State Normal College, Ypsilanti, Michigan.

*CHARLES FREEMAN MOORE, son of Reuben Moore, of Manchester, New Hampshire and Margaret T. Kiddle Moore, of Bedford, New Hampshire,



CHARLES FREEMAN MOORE.

was born St. Clair, Michigan, August 30th, 1842. He married Harriet Rice of Detroit.

He finished attending the common school when seventeen years old. He is a Congregationalist and Republican. The following are his leading occupations: Lumbering till 1885; farming, 1866 to 1902; salt business 1886. He resided in Saginaw 1869-1873, in Detroit 1873-1874; St. Clair the rest of the time.

Offices held: Member of the school board; alderman and mayor of St. Clair; member of the State Board of Agriculture 1893-99; director of the American Shorthorn Breeders Association, 1903. He died at the Sanitarium, Battle Creek, March, 1912.

Children: Reuben R., Frederick W., Mary, Harriet, Ruth, died in 1871.

CHARLES JAY MONROE was the son of Jay Randolph Monroe of Surry, New Hampshire and Fanny (Rawson) Monroe of Erving, Massachusetts. He was born November 20, 1839 at Lawrence, Van Buren county, Michigan. He married Hattie Morehouse of Albion, Michigan, who was educated at Albion and at the State Normal School, Ypsilanti. Mr. Monroe was educated in the common school with over two years at the Agricultural College and a course in the law school of the State University. In religion he is as nearly a Unitarian as anything, in politics a Republican. During his active life he has been farming, and banking, at one time manager of three banks. He has served as school inspector, supervisor, county surveyor, trustee of the Michigan Asylum 1890-93; member of the State Board of Agriculture 1894 to June 1907; state Senator 1883-89. He has been active



CHARLES JAY MONROE.

in local and state horticultural societies and in every way is an enterprising citizen of great worth.

Children: Stephen B., George C., Cora J., Lucy, deceased, Charles O.
Address: South Haven, Mich.

WILLIAM EDWARD BOYDEN was the son of Edward Luther Boyden, of Washtenaw county, Michigan and Frances A. (Burnett) Boyden of Phelps, New York. Wm. Edward was born in Webster township, Washtenaw county, Michigan, July 15, 1860. He married Nettie Adelia Robison, of Sharon, Washtenaw county. She was reared, educated and married in Ann Arbor, Mich. He was educated in a public school of Detroit, having frail health. He is a Republican and no surrender. Since arriving to the majority he has always been a farmer, preferring live stock, living on the old home farm until November 13, 1901, when as manager of a farm, he cast his

lot with Eugene Fifield of Bay City. He was director and moderator of the old home district school; member of the State Board of Agriculture 1895-97; for some years a director of the American Shorthorn Association.

Names of no children were given. Address: Bay City, Station A, Route 6.

*ARTHUR CRANSON BIRD, 1897-
Secretaries.

Resigned January 25, 1899. See

THOMAS FRANK MARSTON is the son of Isaac Marston, from Ireland, later Justice of State Supreme Court, and Emma (Sullivan) Marston of Wayne county, Michigan. He was born in Bay City, Michigan, March 15, 1869. He married Francis Sheldon, of Rutland, Vermont. He is well educated,



WILLIAM EDWARD BOYDEN.

though not a graduate of any college. He attended grammar school in Bay City; Detroit high school; during the summer of 1888 he attended the Michigan Agricultural College; some time in the University of Michigan; Agricultural School of the University of Wisconsin. He is a Presbyterian and a Republican. In succession the following indicates his occupations: Farming and breeding Jersey cattle; county commissioner for building stone roads; member of the State Board of Agriculture, 1897-1903; 1905-08, president of same; member of the State Live Stock Commission.

Children: Helen, Sheldon, Marion Frances, Thomas Frank. Address: Bay City, Michigan.

*EDWARD PAYSON ALLEN was born October 28, 1839, in the township of Sharon, Washtenaw county, Michigan. He was the son of Lewis Allen of Morristown, New York and Eliza (Marvin) Allen of New York City.

He was married to Clara E. Cushman of Sharon, Michigan, on May 12, 1869. She attended the Young Ladies' Seminary of Jefferson City, Missouri. He was educated at the State Normal College; the Michigan Agricultural College in 1858-1859; graduated in law of the University of Michigan 1867; practiced law in Ypsilanti with S. M. Cutcheon for eight years. Enlisted July, 1864, as first lieutenant of the 29th Michigan Infantry. He was promoted to adjutant and captain and served to the close of the war. He was active in the Presbyterian church. In 1872 he was elected alderman of Ypsilanti; prosecuting attorney of Washtenaw county; member of the legislature 1877-1881, speaker pro tempore; mayor of Ypsilanti 1881 and one term previous; member of Congress 1886. He was a delegate to the National Republican Convention 1896. He was a popular campaign speaker and stumped many



THOMAS FRANK MARSTON.

states from Maine to Virginia, Ohio and Michigan. He was a member of the State Board of Agriculture 1899-1905.

He died November 26, 1911, at Ypsilanti, Michigan.

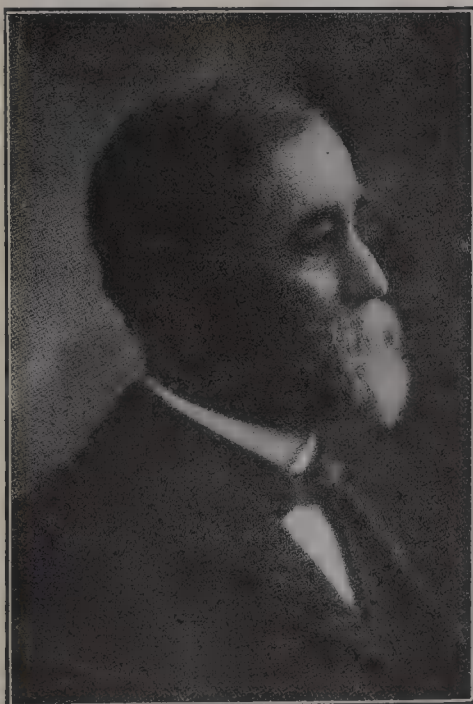
Children: Elmer Cushman, Louise (Thompson).

Information given by Mrs. E. P. Allen, 213 Hamilton St., Ypsilanti, Michigan.

HOLLISTER FESTUS MARSH was born in the City of New York in 1837. He is the son of Hollister F. Marsh of Massachusetts and Jane (Morehouse) Marsh of New York City. He married Maria E. Regan in Chicago, Illinois, who was born in New York State and educated in a girls' seminary in Illinois. Mr. Hollister attended Rockville Seminary, Connecticut, not graduating. He belongs to the Congregational church and is affiliated with the Republicans.



EDWARD PAYSON ALLEN.



HOLLISTER FESTUS MARSH.

He was a bookkeeper in New York City 1854-1855; in the lumber business in Chicago, 1856; opened an office for loans and investments in Allegan, Michigan, 1870—still in Allegan, 1912.

He was City Clerk in Chicago, 1859-60; member of the State Board of Agriculture 1899-1903.

He was at the convention in the Chicago Wigwam when Lincoln was nominated; he and his wife helping in the decorations.

Children: Jennie E., deceased, Arthur F.

Items given by Hon. H. F. Marsh.

LUCIUS WHITNEY WATKINS was the son of Hon. L. D. Watkins, who was born at Keene, New Hampshire and Sarah English of King county, Ireland. He was born August 6, 1873, at Norvell, Jackson county, Michigan. He



LUCIUS WHITNEY WATKINS.

married Grace Edith Alley at Dexter, Michigan, June 28, 1899. She was educated at Dexter high school and the University of Michigan.

Mr. Watkins was graduated from the Agricultural College in 1893 with the degree of B. S. In religion he is an Episcopalian, in politics a progressive Republican.

He is a student of bird life, a thorough farmer and fruit grower on an extensive scale. He was a charter member of the State Academy of Science: he was a member of the advisory committee of the M. A. C. Alumni Association 1908-1909; deputy State Game and Fish Commissioner 1896-7-8; member of the State Board of Agriculture 1899-05; member of the State Senate 1909-1911; president of the State Association of Farmers' Clubs, 1906-1907; president of the State Live Stock Breeders and Feeders' Association 1906-7; candidate for governor, National Progressive party, 1912.

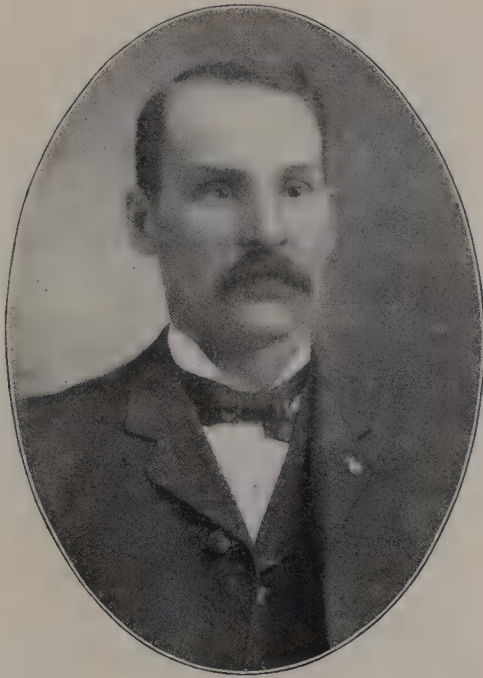
At the age of 40 years, he has already had a remarkable career.

Children: Lucius Denison, Douglas Alley, Merrit Whitney. Address: Manchester, Washtenaw county, Michigan.

ROBERT DARWIN GRAHAM was born November 11, 1855, at Union, Ontario. He was the son of Elwood Graham and Anna M. (Kipp) Graham, both of Ontario. He married Annie Gross, of Rockford, Michigan. He was educated in district and city schools.

He was of Quaker parentage, in politics a Republican. He read law and was admitted to practice in the Supreme Court of Michigan, April 17, 1879. Operated a fruit farm, continuing in 1913.

President of the Fifth National Bank, Grand Rapids, April 1900, continuing to consolidation, August, 1908, then became president of the Com-



ROBERT DARWIN GRAHAM.

mercial Savings Bank; director of Citizens Telephone Company; treasurer of Kent Storage Company; treasurer of Sanitary Milk Company; treasurer of West Michigan Fair; treasurer of the West-Side Building and Loan Association; supervisor 1894; representative in the state legislature 1895; state senator 1899; elected a member of the State Board of Agriculture 1902 to fill a vacancy; in 1905 appointed by Governor Warner; elected under the new constitution; chosen Chairman of the Board.

Children: Josephine, Herman, Ada, Carl, all adopted.

Address: Grand Rapids, Michigan.

Residence: Walker Township, Kent County, Mich.

WILLIAM H. WALLACE, son of Robert Wallace, born in Ireland and Margaret Deegan, born in Canada, was born at Port Hope, Huron county,

Mich. He married at Bay Port, Margaret McIntyre of Grindstone City, Michigan, May 1, 1870.

He was educated in the high school at Port Austin, and Goldsmith's Business University, Detroit, Michigan; educated much by good hard knocks in a stone quarry in summer and lumbering in winter. He is a Presbyterian and a Republican. His business has been: Shipping clerk for two years; superintendent of Bay Port Quarries for four years; superintendent of Saginaw Tuscola and Huron Railroad for two years; general manager of this railroad for four years; general manager of the Sugar Company of Sebewaing for three years; general manager of the Michigan Sugar Company of Saginaw, Michigan, five years, still holding (1913). He has held no public offices; several honorable appointments; commissioner of the Pan American Exposition; member of the Republican State Central Committee for eight



WILLIAM H. WALLACE.

years; member still holding of the State Board of Agriculture 1908, time expiring in 1916.

Children: Nellie, Belle, Robert, William H., Jr., Ora M., Margaret. Address: Eddy Building, Saginaw, Mich.

AARON PITT BLISS was born July 27, 1860, at Peterboro, Madison county, New York. He was the son of Eli S. Bliss and Mariette Hoffman, both of the town last mentioned. He married Mary Brockway in Saginaw, Michigan, December 12, 1882. He was educated at Evans Academy, then in Saginaw and Detroit.

He is a member of the Methodist church and is a Republican in politics. He was a member of the State Board of Agriculture from 1903-1909. His occupation has been that of lumbering and farming.

Children: Abel B., Allaseba, George B.

Address: 1101 North Michigan Avenue, Saginaw, Michigan.

Information given by the wife through the efforts of Miss Louise Rademacher of the Department of Bacteriology, M. A. C.

HENRY FRANKLIN BUSKIRK is the son of William Buskirk of Ovid, New York and Sophia (Sadler) Buskirk of Clarence, New York. He was born at Hopkins, Michigan, November 26, 1856.

He married Lillian Hoyt, of Wayland, Michigan, January 28, 1881. He was one year in the high school and four years at M. A. C., graduating in 1878, with the degree of B. S. He is a Christian and a Republican; a dealer in lumber and a farmer 1881-93; a farmer 1878-1913.

He has held various offices in township and village; two terms a member



AARON PITT BLISS.

of the state house of representatives, 1897-1901; member of the State Board of Agriculture, 1905-1907, to fill a vacancy. A thoroughly reliable and worthy man.

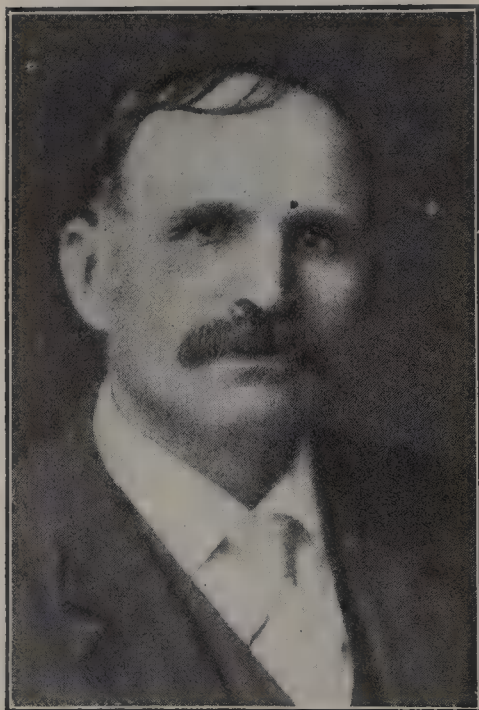
Children: Bessie, '03, wife of Prof. J. Fred Baker, '02; a son, died when two years old. Address: Wayland, Mich.

WILLIAM J. OBERDORFFER was the son of William J. Oberdorffer and Catherina (Reuther) Oberdorffer, both natives of Germany. He was born March 18, 1855.

He graduated from the National Schools of Germany in 1870 and came to Michigan in 1871. He married Adelaide Corey, at Stephenson, Michigan, August 27, 1887. In religion he is a Methodist Episcopal, in politics a Republican. From 1873-1876 was employed by a railroad company at



HENRY FRANKLIN BUSKIRK.



WILLIAM J. OBERDORFFER.

Escanaba; 1876 located on a farm at Stephenson, Michigan, where he still resides (1913). He served as supervisor 1889-1896; member of the legislature 1896-1900; again supervisor 1904-1911; member of the State Board of Agriculture June, 1906-January 1, 1912; member of the Constitutional Convention, 1907.

Mr. Oberdorffer is an industrious and public spirited citizen.

Children: Cora Alice, senior at M. A. C.; Jessie Mary, freshman at Lawrence University. Address: Stephenson, U. P., Michigan.

AFRED J. DOHERTY, son of M. J. Doherty of Canada and Mary A. (Wiley) Doherty of New York, was born May 1, 1856, in the city of New York. He married Alice B. Gleason in 1876. He was educated in the public school and graduated in 1875 from the Genesee Valley Seminary, Brevort, New York.



ALFRED J. DOHERTY.

He is a Republican; was a school teacher till 1880; hardware merchant until 1898; president of the Milling Light and Power Company of Clare; owner of the Water, Light, Sewer and Power Company at Mackinaw Island, Michigan, 1904, still owning (1913); general superintendent of the State Agricultural Society in Detroit, 1904-1910; member of the state Senate 1899-1906; member of the State Board of Agriculture 1907-1913.

Children: Floyd E., Frank B., Alice B., Alfred J., Jr. Address: Clare, Michigan.

I. ROY WATERBURY was the son of Richard H. Waterbury of Nassau, Rensselaer county, New York and Loxey L. (Sutton) Waterbury, of Oakland county, Michigan. He was born October 2, 1869, at Highland, Michigan. He married Emma D. Hagadorn of Highland, Michigan.



I. ROY WATERBURY.

He was educated in the public schools with supplementary reading. Affiliated with the Congregational church, a Republican in politics. He was a farmer and merchant at Highland 1903; editor Michigan Farmer 1904, continuing in 1913; township clerk 1895; township treasurer 1896; supervisor 1897-98; member of the legislature 1899-1900; 1901-1902; state Senator 1903-1905; trustee of the State Hospital for Insane at Pontiac 1905-1907; member of the State Board of Agriculture 1907-1916.

An active and highly esteemed citizen.

Children: None.

Address: Detroit and Highland, Mich.

MEMBERS APPOINTED BY THE GOVERNOR

Or selected by the remaining members to fill vacancies by death or resignation.

WILLIAM LELAND CARPENTER, son of Charles K. Carpenter of Orion, Michigan, and Jennette (Coryell) Carpenter, was born November 9, 1854, at Orion, Michigan.

He married in Detroit, October 15, 1885, Elizabeth Ferguson.

He is a member of the Congregational church; in politics a Republican. In 1875 he graduated from Michigan Agricultural College with the degree of B. S.; 1878 graduated B. L. from the law school of the University of Michigan; immediately began the practice of law at Detroit, continuing till Janu-

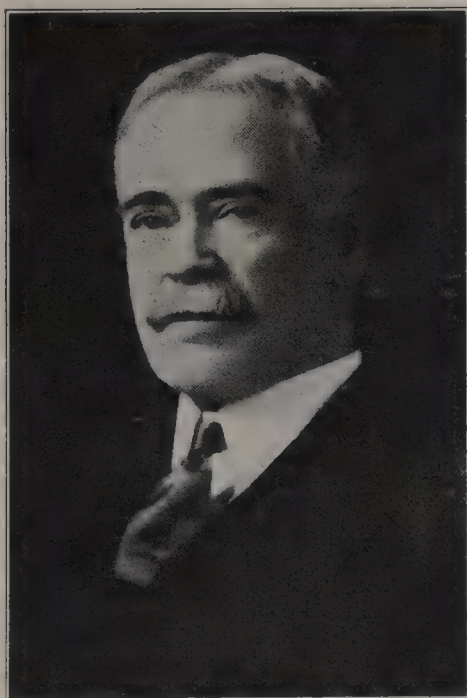
ary 1, 1894, when he became a Judge of Wayne Circuit Court; November 12, 1902-September 15, 1908 Justice of the Supreme Court of Michigan; president of Detroit College of Law, since July, 1902; he resigned his position in the Supreme Court to resume the practice of law in Detroit; member of the law firm Stephenson, Carpenter & Butzel; member by election of the State Board of Agriculture 1908, to serve two years.

Children: Lela E., Rolla Louis. Address: Detroit.

Members of the State Board of Agriculture elected by the people, beginning in 1909.

W. L. Carpenter for two years.

W. I. Oberdorffer for two years.



WILLIAM LELAND CARPENTER.

Robert D. Graham for four years.

A. J. Doherty for four years.

I. R. Waterbury for six years.

W. H. Wallace for six years.

J. W. Beaumont.

Jason Woodman.

MEMBER BY ELECTION, EX-OFFICIO.

LUTHER LAMPHEARE WRIGHT was born January 18, 1856. He was the son of John H. Wright of Vergennes, Vermont and Mary (Stinson) Wright. He married April 21, 1880, Helen Corning, who was born in Portage, Wisconsin.

Mr. Wright was educated in the common school; received the degree of A. B. at Ripon College in 1878; A. M. in the University of Michigan 1908. He is an Episcopalian and a Republican. He was school teacher in Wisconsin 1858 to 1877; superintendent of schools, Wapaca county, Wisconsin 1877 to 1881; county commissioner of schools, Gogebic county, Michigan, 1894 to 1906; state Superintendent of Public Instruction 1909-1913.

Children: Ann C., Luther M.

JOHN WESLEY BEAUMONT was the son of Wallace Beaumont of Ayr, Scotland and Margaret Belsham, of Ireland. He was born at Elizabeth, New Jersey, July 20, 1758; married Alice L. Burrows; she was educated and married in Saginaw, Michigan.



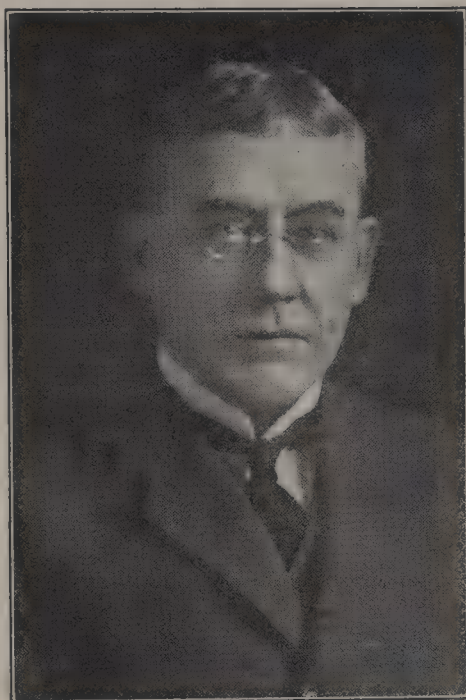
LUTHER LAMPHEARE WRIGHT.

Mr. Beaumont was educated in the public schools of Elizabeth, New Jersey, for about ten years; in 1878 he entered Michigan Agricultural College, graduating in 1882 with the degree of B. S. He was a first rate student. He is a Presbyterian and a Republican.

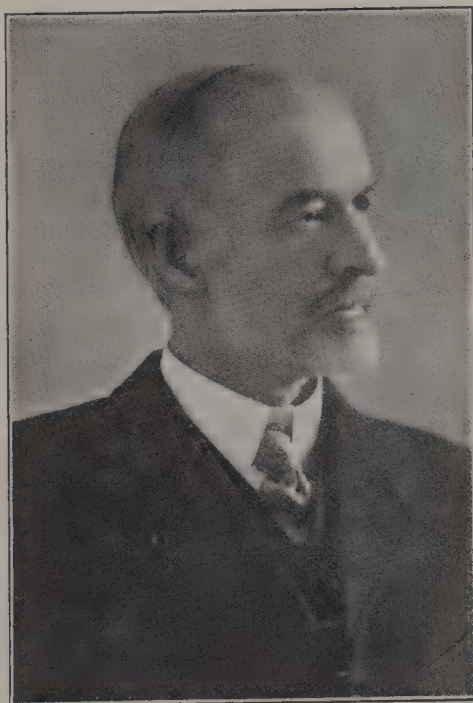
He studied law about three years in Saginaw and was admitted to the bar; removed to Detroit in August, 1886, and opened an office and has continued in practice ever since. He is head of the firm Beaumont, Smith and Harris.

In 1911 he was elected a member of the State Board of Agriculture, his term beginning January, 1912, and continuing for six years.

Children: None living. Address: 1124 Ford Building, Detroit, Michigan.



JOHN WESLEY BEAUMONT.



JASON WOODMAN.

JASON WOODMAN is the son of David Woodman, born in Rutland, Vermont, and Jane Harris Woodman of Caledonia, New York; Jason was born in Paw Paw, Michigan, June 2, 1860.

He married Fannie Buckhout of Oshtemo, Kalamazoo county, Michigan. She was educated in the high school of Paw Paw, Michigan. Mr. Woodman was educated in local schools and was graduated at the Agricultural College in 1881 with the degree of B. S. In politics he is a Republican, of the old fashioned variety—a stand patter. He is a successful farmer in the township of Paw Paw; was chairman of the Republican County Committee, 1897-1901; served two terms in the state Senate 1903-1907; elected a member of the State Board of Agriculture in 1911 to begin serving Jan. 1, 1912 for six years. He has been a most successful lecturer all over the southern peninsula for the grange; beginning 1886, he was lecturer of the State Grange for eight years; lecturer for farmers' institutes and in political campaigns. He is extensively acquainted in nearly all parts of the state; a genial citizen; a successful farmer. He has recently been employed by the U. S. Government to engage in the work of farm management in Kalamazoo county, Michigan.

Children: Cora, Thomas, Daniel, John.

Home address: Paw Paw, Michigan; business address, Kalamazoo, Mich.

SECRETARIES.

*ROBERT DODD WEEKS, Secretary, 1857. (See Professors.)

*THEOPHILUS CAPEN ABBOT, 1861 to December, 1863. See President.

*CARLOS A. KENASTON, pro tempore, 1863-64.

With the exception of Sanford Howard, the secretaries have maintained offices at the college.

*SANFORD HOWARD, son of Roland Howard of Bridgewater, Massachusetts, and Phoebe Howard of the same town, was born at Easton, Massachusetts, August 7, 1805.

He married Matilda Howard (Williams) at Easton, Massachusetts, August 23, 1827. She was born at Easton, July 29, 1803; educated in the district school.

Mr. Howard was educated in the district school and also the hard school of experience. He was a Universalist; in politics Whig and later Republican. From 1831-1837 he was a farmer in Easton, Mass., and in Augusta, Maine.

When quite a boy, he evinced a decided love for natural history, especially that relating to domestic animals.

In early life he became acquainted with Colonel Samuel Jaques and the Hon. John Welles, two of the most noted breeders of their times. To this intimacy the world is indebted, in a measure, for much of the information disseminated through Mr. Howard's pen during the last thirty years of his life.

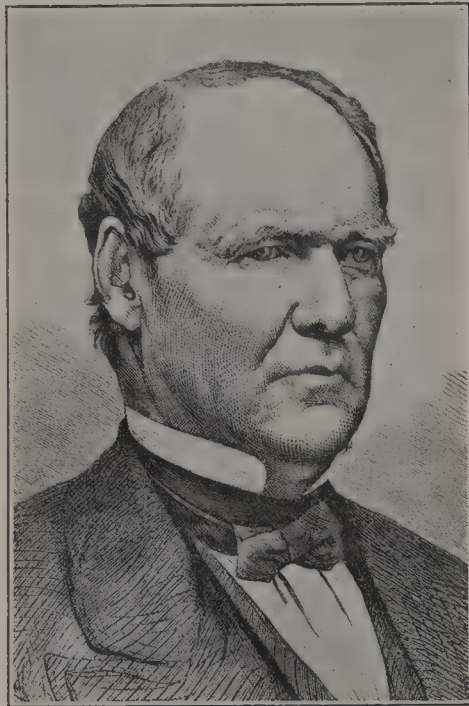
At seventeen he became a clerk in a store but after two years he returned from choice to the farm. In 1837 he moved to Zanesville, Ohio, and engaged in farming, and was soon sent back to Massachusetts and New York to purchase good stock for some of his neighbors; 1844 he became associate editor of the Cultivator with Luther Tuckerman; January 1852, he moved to Boston,

Mass., to take charge of the agricultural department of the Boston Cultivator; in 1857 visited Great Britain, Ireland and France to purchase stock for a society; he imported more stock later; in February 1864 he was elected secretary of the Michigan State Board of Agriculture and in May moved to Lansing and began his work. He never resided at the College, but remained in Lansing, till his death March 9, 1871.

Children: Louisa Matilda, Henry Roland, Caroline Augusta, Sophia Amelia, (Mrs. T. D. Knight), Hannah Fillebrown (Mrs. Neil Matheson), Fanny Harriet (Mrs. Henry B. Baker).

His wife, Mrs. Sanford Howard, survived him to the age of 94. She was a very able woman, the leading organizer of the Lansing Woman's Club.

RICHARD HAIGH, JR., pro tempore, March 1871 to November 11, 1873.



SANFORD HOWARD.

*WILLIAM HENRY PICKERING MARSTON was the son of Enoch Marston who lived near Boston, Massachusetts and Eleanor E. (Pickering) M., born in England. He was born at Barnstable, Mass., May 28, 1842, from which place he and others of the family moved to New York City.

In 1870, he (1) married Sarah Ann Sherriff of South Bend, Indiana; (2) Harriet L. Babcock, November 9, 1884. Mr. Marston was a Republican and something of a politician. He moved to Detroit where he became secretary to Governor Bagley, enrolling as engrossing clerk of the state legislature; November 1873 to August 1875 he was secretary to State Board of Agriculture; register of deeds in Berrien county; editor and publisher of the Benton Harbor Palladium; dealer in oil; manager of a refrigerator company; moved to Fitzgerald, Georgia, in 1895 where he became president and secretary of the Board of Education. He was a prominent fraternity



W. H. P. MARSTON.



ROBERT GARDNER BAIRD.

man as Mason, Odd Fellow, A. U. O. W., and the Owls. He was postmaster at the time of his death; wounded in the Civil War, eleven and one-half inches of the tibia of one leg had to be removed; member of the Episcopal Church.

He died May 26, 1911.

Children: By first wife, William H., Jr., Eleanor M., Mrs. Willis L. Smith, three others deceased; by second: James B. Duffield, Mary E., Helen J., Hallett P., Harriet Evelyn, Theodore R., Mrs. G. A. May, one infant died.

Items supplied by his widow at Fitzgerald, Georgia.

ROBERT GARDNER BAIRD of Scotch descent became a Congregational minister and served as a pastor in Portland and Armada, Michigan, and most likely elsewhere. He married Mary Jane Scott who survived him about 25 years, living in Grand Rapids, Michigan. He was appointed secretary of the State Board of Agriculture, August 1875 and served until his death at the College August 5, 1885. In addition to his secretaryship he served as postmaster, beginning with the establishment of an office at the Agricultural College in August, 1884.

At the time of his death the College Speculum, strange to say, contains no account of his services nor does the report of the State Board of Agriculture for 1885. The omission was probably due to the ill health of President Abbot and the fact that both President Willits and Secretary Reynolds had been recently elected.

When this imperfect sketch was written all the children had died; one surviving grandson resides in California while the household goods are stored in Grand Rapids.

Children: Ella (Mrs. Charles Mason Knappen), Henry Ward, '83, William Scott, '85, Robert Douglas, an invalid.

The four children and Charles M. Knappen all died of consumption and later Mrs. Baird died of the same disease.

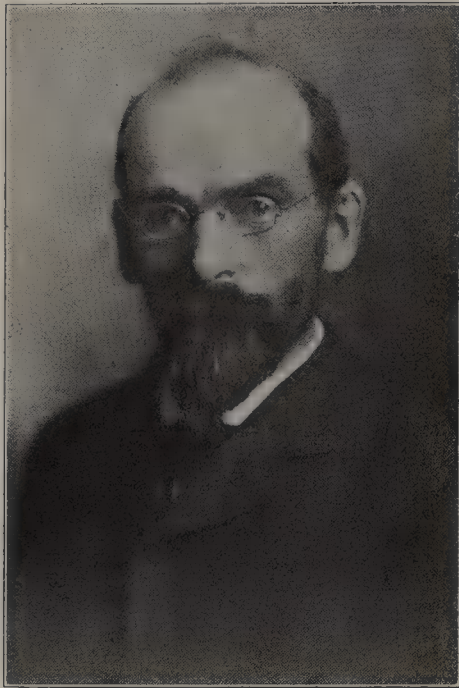
HENRY GRAHAM REYNOLDS was the son of James Lusk Reynolds of Enfield, Connecticut and Mary Greene (Duncan) Reynolds of Massillon, Ohio. He was born July 4, 1851 at Buffalo, New York. He married Frances Arbuthnot Llewellyn of Louisville, Kentucky, at Mexico, Missouri, September 24, 1874. Mr. Reynolds was educated in a grammar school and the high school of Chicago, and was graduated from the Michigan Agricultural College in 1870 with the degree of B. S.; M. S. in 1873, M. H. in 1893, spent one year (1872) in Fresenius Laboratory, Wiesbaden, Germany. He is an earnest Christian; is violently opposed to the further protection of our adult industries also to any further pauperization of what began as the G. A. R., but now is largely a Base Army of Leeches. In 1871 he was foreman of the Horticultural department; 1872-1884, fruit grower at Old Mission, Michigan; June 1885-June 1893 secretary of the State Board of Agriculture; 1894-1911 retired on account of ill health. At one time he was supervisor of his township; member of the Board of School Examiners; member of the State Board of Agriculture 1879-June 1885; city councilman.

The details of his office were so well in hand that at any moment the Board could know from his statement just what money was at their disposal. He was a good business manager. He drafted the bill which passed, placing the entire management of the remaining college lands in the hands of the State Board of Agriculture. He is a man of decided opinion, naturally

combative and will fight for what he believes to be right. To his friends he is intensely loyal; enemies he has none.

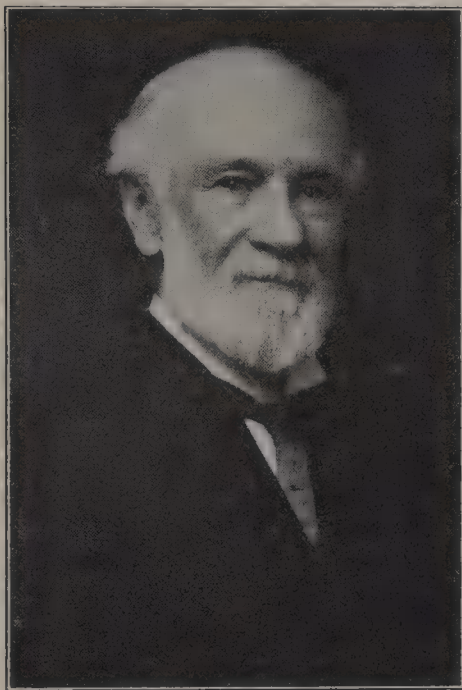
Children: Frederick Llewellyn, Robert L., '93, Duncan L., Jessie L., (Mrs. Terrell), Margaret Vilette, Graham L., Kenyon L. Address: 257 W. California St., Pasadena, California.

IRA HOWARD BUTTERFIELD was born December 22, 1840 at Utica, Macomb county, Michigan and took the same name as that of his father, hence for the early part of his life, wrote after it "junior." The name of his mother was Rachel (McNeil) B. He married, August 29, 1866, Olive F. Davison, Lapeer, Michigan. He was brought up on a farm, educated in the common school, Westfield Academy, New York, State Normal School, Michigan, a total schooling of approximately that of a high school. When twenty, he



HENRY GRAHAM REYNOLDS.

started overland for California having in charge a drove of cattle and sheep for his father and John D. Patterson. He returned in about two years. In 1865 he began on his own farm breeding Holstein cattle and Merino sheep, continuing until 1893. In 1879, he was appointed deputy collector and inspector of customs at Port Huron, serving until 1885 and again in 1889, resigning in 1893; appointed a member of the State Board of Agriculture 1889, serving until 1893 when he was elected their secretary serving until February, 1899, also serving as postmaster until 1902; in 1881 he was a member of the Executive Committee of the State Agricultural Society; 1891 elected secretary of that society, serving for four years; vice-president three years, 1898 president; 1899-1910 secretary; 1910-1911 general manager of the Connecticut Fair at Hartford. He is a genial man without taint of dishonesty.



IRA HOWARD BUTTERFIELD.



ARTHUR CRANSON BIRD

Children: Kenyon L., Bertha May, Raymond H., Clinton D., Mary Alice (Nichols), the second and third not living.

Address: Amherst, Massachusetts.

*ARTHUR CRANSON BIRD, January, 1899-June, 1902, was born May 22, 1864 at Highland, Michigan. He married Josephine S. (St. John) of Ann Arbor, Michigan in August 1889. He attended common school until the age of fifteen when he entered the Agricultural College and graduated in 1883 with the degree of B. S., paying most of his expenses in college by his own exertions. He soon bought a farm and lived on it, succeeding so well that the State Board of Agriculture conferred on him the degree of Master of Agriculture. In 1897 Governor Pingree appointed him a member of the State Board of Agriculture which position he resigned January 25th, 1899.



ADDISON MAKEPEACE BROWN.

He was a prominent worker in farmers' clubs, both local and state, having served as secretary and president in the State Association; editor of the department of Farmers' clubs of the Michigan Farmer.

On January 25, 1899 he became secretary of the State Board of Agriculture which he resigned in 1901 and engaged in several kinds of business in Lansing and vicinity.

For about six years he was president of the Dairy and Food Commission. In 1905 he was selected by Governor Warner to take the state census. He was a prominent figure in state politics and a close friend of Governors Pingree and Warner. He died rather suddenly May 25, 1910.

Children: Harold, Clare. Address: East Lansing, Michigan.

ADDISON MAKEPEACE BROWN, son of Ebenezer Lakin Brown and Mary Ann (Miles) Brown, both born in Vermont. A. M. Brown was born February 15, 1859, at Schoolcraft, Michigan.

He married Mollie Eliza Earl of Schoolcraft, Michigan. They both attended the public schools and Mr. Brown graduated from the University of Michigan in 1883 with the degree of B. A. He is an ardent Republican. After graduation at the University, he was farming until 1902; president of the village 1885; member of the State Senate 1899-1901 where he was chairman of the committee on the Agricultural College; June 1, 1902, elected secretary of the State Board of Agriculture, still serving (1913) with the prospect of much longer service; during which time he has maintained the reputation of being a straight-forward business man and making many friends by his uniform courtesy. He is an optimist. He has a beautiful family.

Children: Hearty Earl, A. B., Univ. of Mich., '09, Edward Lakin, B. S., Agricul. College, '10, Dorothy Miles, A. B., Univ. of Mich., '11, Malcolm Makepeace, student in Agricul. College, Pamela.

TREASURERS.

Beginning in 1861, the treasurers lived in Lansing where they received the money and accounting as turned in by the secretary of the Board.

*JOHN CLOUGH HOLMES, 1857-58. See Member of the Faculty.

*THEOPILUS CAPEN ABBOT, 1858-61. See President.

*LANGFORD GREEN BERRY, 1861-65.

*JOSEPH MILLS, 1865-71.

*EPHRAIM LONGYEAR, 1871-85.

MERRITT LAPHAM COLEMAN, 1885-February 1887.

BENJAMIN FRANKLIN DAVIS, February 1887-

PRESIDENTS.

*JOSEPH RICKELSON WILLIAMS, journalist, was born in Taunton, Massachusetts, November, 1808, his parents removing soon after his birth to New Bedford. His father, Captain Richard Williams, was a shipmaster, and held the office of postmaster of New Bedford. His mother was Rebecca (Smith) Williams, one of a numerous family, and a birthright member of the society of Friends. He came from Puritan stock. He graduated at Harvard, in 1831, having held a high rank of scholarship.

In his class were Motley, the historian, Wendall Philips, the great agitator, Dr. Morrison, for many years editor of the Unitarian Review. He was three times Whig candidate for Congress, but his party then was in a hopeless minority. He was twice candidate for United States senator against General Cass, and was a member of the Michigan constitutional convention of 1850.

He was in 1835, one of the founders of the Toledo Blade, it being through his suggestion that it received its name. To his energy and courage—when, in 1850, he returned and assumed its proprietorship—the people owed the great influence which it attained in the Northwest. During the Kansas and Nebraska troubles, he made a vigorous and uncompromising fight against the slave power, and labored with telling forces in inaugurating the Re-

publican party in northern Ohio. In all matters wherein a principle was involved, he was steadfast, no matter what the consequences. In his editorial capacity he feared neither political parties nor great corporations, and acting upon this, while gaining respect for his opinions and his policy and making many friends among those who appreciated his fearless and honest press, he frequently brought down powerful influences against him—which, however, failed to intimidate him in the full expression of convictions, or to shake his consistency, decision, and courage in upholding principles or measures which he believed to be right. But the labor of editing and conducting the business of a daily paper caused too great a strain on his strength. After continuing the work about three years he sold the Toledo Blade and accepted an invitation at the hands of the Michigan legislature to assume the presidency of the Michigan Agricultural College.

This he pioneered through the troubles and difficulties attendant upon a novel experiment, with ability, skill and far-sightedness, although he had an element of discord to contend with, of extreme religious bigotry within and political partisanship without. He held this position for about two years, and in 1861 was elected to the Michigan senate, at the closing session of which he was elected president pro tem. On the same day immediately after the close of the session, he was seized with a serious attack of hemorrhage of the lungs, and while still weakened by it he repaired to Washington. This was during the stormy period of the commencement of the war. Here he recruited rapidly, and when an extra session of the legislature was called for May 7th, he hurried north to discharge his duties as president of the senate. Leaving his home for Lansing during the severity of a cold May storm, his health received a severe shock, from the effects of which he died June 15, 1861, at Toledo, at the age of fifty-three years.

He married in Buffalo, May 28th, 1844, Sarah R. Langdon, a native of Portsmouth, New Hampshire, and youngest daughter of John Langdon, formerly a prominent shipping merchant of that place; likewise grand-niece of Governor John Langdon of New Hampshire, member of the first Congress and signer of the constitution of the United States.

After the death of Mr. Williams his widow returned to Toledo and was herself prominently identified with public affairs in that city up to within a few years ago. For a number of years she was one of the proprietors and editors of the Sunday Journal; she was the founder and for a great many years the editor of the Ballot Box, a paper devoted to the cause of woman suffrage, which is still being published in Rochester, and is the official organ of the cause which it represents. An intimate friend of Elizabeth Cady Stanton and Susan B. Anthony, she was one of the great incorporators of the Toledo Woman's Suffrage Association, and for a great many years its president; she was also one of the founders of the New Century Club more than twenty-five years ago, and was one of the trustees of the Toledo University of Arts and Trades under bequest of Jessup W. Scott.

"Mrs. Williams was a woman of great intellectual force and a powerful writer on all public questions.

"During the war she devoted herself to the cause of the union and gave generously of her time and means to the assistance of the union soldiers. She volunteered herself as a nurse and went to the front to take care of the wounded. During her entire life she was ever ready to devote her wonderful energy to the cause of humanity oppressed, in whatever guise it appealed to her sympathy. She was a devoted wife, a fond and careful mother and a true friend." (M. A. C. Record, April 22, '02.)

Children: Charlotte Langdon (Mrs. John F. Rumler) (1911), living in Toledo, Ohio; Sibyl, Rebecca, (Mrs. Rebecca N. Cooper) Toledo, Ohio. (1911).

The reader will find much more concerning President Williams in the chapter concerning his administration of the Agricultural College.

The following is copied from the Necrology of Harvard University:

"At the age of sixteen years the subject of this notice was apprenticed in a counting-room in Boston, where he remained two years; but disliking a mercantile life he relinquished his place with the intention of obtaining a collegiate education. He pursued his preparatory studies at Sandwich Academy, under the instruction of Luther Barker Lincoln (H. U. 1822). He gained a high rank of scholarship in his class, and graduated with distinguished honors. He taught school in his sophomore year in Concord, Massachusetts, and in his senior in Northborough, Massachusetts. After leaving college he studied law in the office of Honorable John Davis of Worcester, (Y. C. 1812) was admitted to the Bar and began the practice of his profession in New Bedford. Soon afterwards Honorable John H. Clifford of New Bedford, afterwards Governor of Massachusetts offered him a partnership in a lucrative practice, which he declined on account of his health. He was always a student, and as a writer, if he had addressed himself persistently to any department of letters, would have been distinguished. He was at one period an acceptable contributor to the North American Review. An admirable and exhaustive article upon the whale fishery appeared in its pages, prepared by him while he was in Mr. Clifford's office. If he had devoted himself resolutely to his profession he would have obtained a high position in it. In 1835 he relinquished his profession, having accepted the agency of an extensive New England Company for investments in western lands, and went to Toledo, Ohio. The place, then small, offered few inducements beyond the opportunity for speculation in city property, in which Mr. Williams successfully engaged. He built the American Hotel in 1836, and remained there until 1839, when he removed to Constantine, Michigan."

The following is from the Toledo Blade:

"Mr. Williams was a writer of great power, his ideas were comprehensive and his words aptly chosen. He expressed as much meaning, in as few words, as any editor with whom we are acquainted. He possessed great power of sarcasm, which he sometimes used with great effect, and a genial humor ever ready at his bidding. In social life he was an agreeable companion full of intelligence, with a large acquaintance with books, and extensive literary acquirements which served to adorn the finest natural powers as a conversationalist. He was a man of great heart, generous to a fault, and deeply sensitive to the misfortunes of his fellow men."

*LEWIS RANSOM FISK, A. M., son of James Fisk of New Hampshire, and Ellanor (Ransom) Fisk, New York State, married Elizabeth R. Spence; in 1845-46 he attended the Wesleyan Seminary, now Albion College; 1850 graduated from the University of Michigan with the degree of A. B.; studied law; studied chemistry at Harvard; 1850 professor of natural sciences in Wesleyan Seminary; 1853 professor of natural science, State Normal School; 1857-1862 professor of chemistry at Michigan Agricultural College and acting president 1859-December 1862; 1863 pastor M. E. Church, Jackson; 1866 pastor Central M. E. Church, Detroit; 1869 pastor at Ann Arbor; 1872 presiding Elder for Ann Arbor district; 1873 received D. D. from Albion College; 1873 pastor of the Central M. E. Church, Detroit; 1876 pastor of

Tabernacle Church, Detroit; 1879 LL. D. from the University of Michigan; 1875 he was editor of Michigan Christian Advocate; 1877 and later president of Albion College for many years; in 1890 he was president of the State Teachers' Association.

Professor Fisk fitted up a laboratory in College Hall and taught chemistry in 1858 one year previous to such work for under graduates at Harvard University.

S. M. Millard '64 has this to say:

"Lewis R. Fisk was a man of pleasant address, genial and generally liked by the students. His position was a hard one as is always the case with a man who is a *pro tempore*.

"His connection with M. A. C. never impressed itself upon the College, largely because of his uncertain tenure therein.

"Nevertheless the students of his time always held him in due respect and as a member of the faculty, he was a factor in the early life of the College."

He died February 14, 1901 at Denver, Colorado.

Children: Lewis R., Joseph Henry, Frederick Irving, Herbert Elwood, Clarence Adelbert, Elizabeth Isabella, (later Mrs. Leonard of Albion, Mich.)

The above items were chiefly furnished by his daughter, Elizabeth Fisk Otis of Albion, Mich.

THEOPHILUS CAPEN ABBOT, A. M., LL, D., was born in Vassalboro, Maine, April 29, 1826. While a mere lad his father moved to Augusta, Maine, where his early school days were spent, and where preparation was made for entrance into college. That the close scholarly habits for which Dr. Abbot was so remarkable, were not alone peculiar to his mature years is evinced in the fact that he graduated from Colby University, Waterville, Maine, at the age of nineteen, and was considered by an alumnus of the college, as one of the most scholarly graduates that had ever left the university. After graduation Mr. Abbot taught in an academy in Vermont for a portion of a year, and then for some years taught in a seminary in northern Maine, taking long vacations, which were spent in pursuing a post-graduate course in the college at Waterville. During this time, he taught chemistry and the higher mathematics. During the early years of our own College, Professor Abbot taught mathematics, and his readiness, and ability to make even dry hard mechanics and conic sections fascinating was often commented upon by the students.

He next took a two-year's course in the Bangor Theological School, after which he taught Greek at Colby University for one and one-half years.

At this time Professor Abbot made his first visit to Europe, where he spent a good part of a year. He was specially delighted with Northern England and Scotland, which was partly owing to his extended knowledge of English literature.

In 1856 Professor Abbot came to Michigan, and taught a part of a year at Berrien Springs. In 1857 he was employed to take charge of the Union school as it was then called at Ann Arbor, which also prepared many students for the University. During this year he was called to the professorship of English literature at our College. The position was accepted, but owing to his engagement in Ann Arbor he could not enter upon its duties till the summer of 1858.

Mr. Abbot was professor of English literature beginning February 5, 1858 till 1866; was treasurer of the College so long as it remained under the charge of the Board of Education,—and was secretary for the next two years,

and virtually secretary of the College till 1871. In February 1863 Professor Abbot was unanimously chosen president, much to his surprise, and greatly to the delight of the students, who had already come to look to him for advice and direction, even as to a father. In 1866 his professorship was changed from English literature to logic and mental philosophy. In 1870 he received the degree of LL. D. from the University.

In July 1860, when Professor Abbot was married at Ann Arbor, the students soon learned that in these nuptials, not alone Professor Abbot, but each student was made richer, for now each one had two wise, thoughtful, and true friends, in place of one before. C. B. Collingwood, '85 said: "The key note of Dr. Abbot's character was simplicity, and genuine, honest modesty and he left an indelible impression on this College."

It is not necessary to speak of President Abbot's peculiarities as a man to the ex-students of the College. All have too long revered him for his retiring modesty, his thorough interest in all the students, his Christian courtesy, and heart kindness, which could never suffer him to forget any person who might need aid or advice.

He ever showed in all his associations, a truly judicial mind, which seldom permitted him to err in his judgments or actions. If biased at all it was ever on the side of kindness and leniency. He always trusted largely to the good sense and manliness of the students, and rare indeed was such trust betrayed.

As a teacher President Abbot rarely ever had a superior. He had that most desirable power which impelled students to their best efforts, even though he spoke no word to urge or blame.

As President, Dr. Abbot showed an eye single to the grand object for which the College was established. Nothing could swerve him from a course which should ever keep in view the aid and promotion of agriculture. While other colleges switched off the line, and so lost the regard and friendship of the farmers, our College has ever been true to the farmers' interest, and has constantly grown stronger and stronger in their affections, so that today it stands impregnable, fortified, as it is on all sides by the support and regard of Michigan's able farmers. All honor is due to President Abbot for such wisdom, and firmness which has resulted in placing the College as the first of our industrial colleges. Adopted from a sketch by President O. Clute.

He was a man of medium size, rather thin, loosely built, round shouldered the right one the higher, appearing poorly dressed, no matter how skillful his tailor. He was near sighted, always wearing glasses; without skill in the use of tools. Physically, President Abbot was never strong. Some years since the writer heard him say that he had never known a time, since he entered college, when he was free from pain. Often his headaches, which were his constant companion from youth, were almost unendurable. He was hampered by poor health. He had a genial manner, deep melodious voice and at once made a stranger feel easy in his company.

A year in Europe during 1873-74, failed to restore his health. He was a patient, persistent plodder with very little initiative. His temperament was in the highest degree optimistic. As a sample of his designing while living in house number seven, he carried out a plan for a drive to his west door in this way: From the highway then as now south of faculty row, he left it at a right angle for the south where there is still (1913) a drive, at a certain point he turned a square corner going due west till he was northwest of the house, turned another right angle passing due south to a point a little east of a double sugar maple of his own selection and planting.

Executive duties were never to President Abbot's taste. Study and

teaching were ever his delight. In the fall of 1879, he urged upon the State Board of Agriculture, the wisdom of retiring him to a professorship and placing some younger, stronger man in the president's chair.

On November 24, 1884, when Dr. Abbot resigned as president, he was elected professor of mental philosophy and logic continuing through 1889, when he was continued as Emeritus Professor of these subjects. About this time he ceased to be troubled with severe headaches.

President Clute said of him: "Quietly, gently, without suffering, the dissolution went on. Month by month, year by year, the body became more feeble, the brain became less able for its work. For six years his wife and daughter cared for him with all gentleness. Every want was attended to, every comfort was supplied. At length in the morning of Monday, November 7, 1892, his day of freedom came."

It will be noticed that the professor is said to have been much surprised when elected president, as he with many others supposed, of course, that the Board of Agriculture would elect Professor Fisk president, since he had served three years as president pro tempore. Dr. Miles told the writer that his interview with members of the Board induced them to select Abbot instead of Fisk. Although surprised Professor Abbot felt complimented by the choice. He rarely, if ever, afterwards saw anything amiss in the plans and schemes of Dr. Miles. When Governor Bagley with the aid of four out of six members of the Board insisted on the resignation of Dr. Miles, President Abbot expressed his keen regret at the action and for a long time afterwards seems to have lost his guiding star,—his chief reliance.

The author adds: President Abbot always made the best of everything, even sometimes apparently slightly coloring his reports after the manner of an optimist.

On July 5, 1860, Mr. Abbot married Sarah Merrylees, a teacher in the Union school in Ann Arbor, where he met her while a teacher in the same school. She was born in Lerwich, Shetland Islands near Scotland, March 2, 1828. She died at San Gabriel, California June 22, 1911 and was buried in Mt. Hope Cemetery, Lansing. She was an estimable woman, thoughtful of neighbors and students and rendered her husband much valuable assistance in his duties as president of the College.

Children: Mary Mouat, (Mrs. C. M. Moore) deceased, Joseph Rodney, '84, San Gabriel, California.

For remarks of O. Clute see Michigan Board of Agriculture, p. 157, 1892.

GEORGE THOMPSON FAIRCHILD, A. M., acting president from May 1873-May 1874. See Professors.

*EDWIN WILLITS, A. M., president of the College 1885-89 was born at Otto, Cattaragus county, New York, April 24, 1830. He received his primary education in the common schools of Washtenaw county, and entered the State University, graduating from the literary department with the class of '55, and later won the degree of A. M. from the same institution. After finishing his course at the University, Mr. Willits entered upon the study of law in the office of ex-senator Christiancy of Monroe, and was admitted to the bar in 1857. He was very successful in his practice of the law and reached a position of prominence among the lawyers of south-eastern Michigan. Notwithstanding his success in this direction he was attracted from his profession by his adaptability to school labors and his fondness for educational pursuits. From the time of his graduation, he was more or less interested in educational affairs, either as an instructor or as an officer in

some department in the school system of Michigan. As a teacher he won marked success in the schools of Adrian, and he was afterwards actively interested in the business affairs of the Monroe schools. He was for twelve years, from 1861 to 1873, a member of the State Board of Education. In 1882 he was made principal of the State Normal School at Ypsilanti, which position he filled with gratifying success; the officers as well as the students of that institution very much regretted the necessity which called Mr. Willits to his new field of labor. He was thus not a man unskilled in educational affairs, but enjoyed a wide and varied experience, extending through a number of years, and was moreover intimately and practically acquainted with the school system, and with the educational institutions of our state.

He also occupied political positions of prominence, and was for many years a leading member of the Republican party in the state. He was



EDWIN WILLITS.

prosecuting attorney of Monroe county from 1860 to 1862, and was postmaster of the city of Monroe from 1863 to 1866. Mr. Willits was also a member of the constitutional commission, which was selected in 1873 to revise the state constitution. He was elected to the 45th, 46th and 47th congresses from the second district, comprising the counties of Monroe, Washtenaw, Lenawee, and Hillsdale, he having received large majorities over one of the most popular men of the Democratic party in that district, a district which was then Democratic. This speaks well for Mr. Willits' popularity at home. Mr. Willits was one of the most able and cultured men who had represented the state of Michigan in the United States Congress.

Aside from his law practice he had the advantage of a practical business of several years as editor of the Monroe Commercial.

President Willits was a most genial man, whom the faculty respected

and the students revered. The dormitories were never neater and more orderly than during his administration.

In 1889 he was called from the College to the position of first assistant secretary of agriculture at Washington and with the change of administration was removed by Secretary Morton in 1894. He had entire oversight of the department exhibit of agriculture for the Exposition held in Chicago, 1893.

In '89 when Ex-president Willits returned from Washington to give the commencement address to those he left in the senior class, the students in a body met him over the hill at the west entrance to the campus, and greeted him with round after round of applause, and then marched to a central portion of the campus. How many of the presidents of M. A. C. under like circumstances would have been thus received?

After President Willits had been at the head for about a year, appeared the following in the *Speculum* from the pen of the student editor: "As our very last editorial work, we desire to testify in favor of the rapid strides at advancement this College has made since first we entered her classic halls. Then she was at the low water mark. Now she is nearing the high water mark. May it be a high one towards which she will always be striving. In every department, marked improvement is noticed. In many ways has she been strengthened. M. A. C. has a bright future before her. She has a mission to perform, an obligation to pay. In the still of night, she hears a voice from the Future, imploring her to be true to her sacred trust. May coming years show that '86 went forth into the world fully prepared for life's battle—for defeat or victory. May it be '86's privilege to look back with pride on her 'Old Alma Mater.'"

He occasionally called at the office of each member of the faculty and sympathetically discussed their present and prospective plans. It is no disparaging statement to make that no president of the College was as popular with the students as Mr. Willits.

A. J. Cook says of him: "With President Willits came a change in the management of the College. I think it was a sad mistake, not to say a disastrous one. Before this, changes in internal management were suggested and all new appointments to the faculty were nominated by the president, but only after fullest conference with and approval of the faculty. The board only confirmed. No college board ought ever to do more. With President Willits came a lamentable change; I feel sure without his desire. Additions to the faculty and startling changes in the internal management were made, with no consultation at all with the faculty, and at times, I think, without the knowledge of the President." Selections thus made from time to time in the opinion of the writer have been the cause of setting the College back in its progress fully fifteen years.

The "lamentable change" referred to during the administration of President Willits, began during the latter part of the administration of President Abbot, while Hon. Henry Chamberlain was chairman of the committee on employees. To some extent, at least, this unfortunate custom was kept up for many years.

He married Jane Ingersoll. Their only child survives, and is George S. Willits, an attorney in Chicago. They were members of the Presbyterian church. He died at Washington D. C., October 24th, 1896.

As before mentioned he was cordial, approachable, enthusiastic, ready to meet a professor in need more than half way, which was very encouraging. President Willits was about six feet tall, straight, well proportioned, filling out his clothes well, having a full beard, heavy dark hair and eye-brows;

in fact he was a handsome man with many winning ways. No man ever walked the campus who on many occasions was so enthusiastically received as President Willits, possibly excepting that quiet fellow afterward known as Coach Brewer.

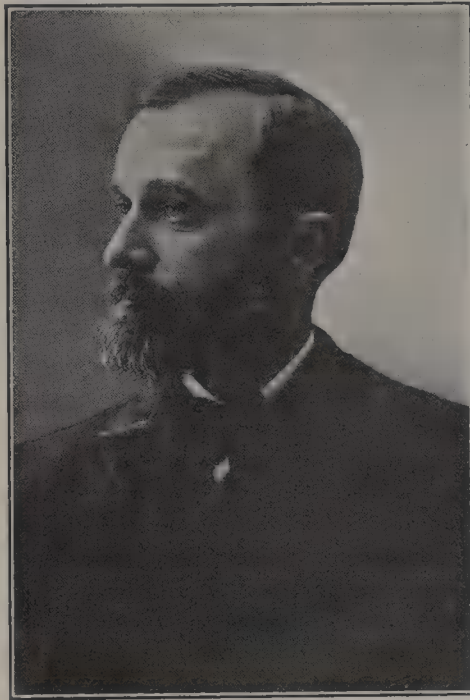
Following are items taken from the Memorial Exercises:

Franklin Wells said: "I became very much impressed with his personality. I was delighted with his frankness and candor."

Mr. Willits said to the Board: Gentlemen—Can I make the Agricultural College a great and useful institution, a power for good in the State? If I can't, I don't want to consider your offer for one moment."

H. B. Cannon '88, (At one time Mr. Willits' Secretary):

"The student body almost at once recognized in him a master hand in administration. There was an atmosphere of hope about him. The students



OSCAR CLUTE.

were proud of their president. The venerable look of the man, his fatherly ways, his eagle's eye—all impressed us and moved us. He captured audience after audience among the farmers. He never slept without fearing that something might go wrong and many a night when we were sound asleep he was pacing the campus, keeping watch and ward.

"He tried to encourage order and cleanliness in every way."

W. A. Taylor, '88, said:

"I have not known another man of such strong views as his who was at heart so tender and merciful. (In disciplining students)."

*OSCAR CLUTE, M. S., was born near Albany, New York, March 11, 1837. In 1868, he married Miss Mary Merrylees, sister of the wife of President Abbot, by whom he had six children. He died in the Soldiers' Home, near Los Angeles, California, January 27, 1902. Until seventeen years of age,

he was on the farm or in school, and always strenuously active in mind and body. At seventeen, he was elected principal of the Binghampton schools, Shiawassee county, which position he held for two years, when he entered the Susquehanna Academy for one year. He was then elected principal of the Ionia (Michigan) schools, from which position he resigned the next year to enter the sophomore class of the Michigan Agricultural College. He was graduated from this College in 1862. During his senior year in college he taught classes in the preparatory department, and on graduation was engaged as instructor. The next year, he was elected to a professorship. He served the College for four years, when he resigned to take a course in theology at Meadville, Pennsylvania. On graduation from the Theological Academy, he accepted a call from the First Unitarian Church at Vineland, New Jersey, where he remained for six years. He ministered in the same capacity at Newark, New Jersey, two years; at Keokuk, Iowa, four years; at Iowa City, Iowa, seven years; and at Pomona, California, one year. From this last church he was called to the presidency of the Michigan Agricultural College, which position he held for four years. In 1889, he resigned and assumed the same duties at the Agricultural College of Florida, where he remained for four years. Soon after accepting his resignation the State Board conferred on him the degree of LL. D. His health at this time became greatly impaired, and he returned to his old church in California. However, he was forced to resign his pastorate because of ill-health, after a few months of service. He remained in Pomona, California, until 1891, when he entered the Soldiers' Home, where he died.

"As a student in college, Dr. Clute was very thorough and untiring in his effort to reach the first place. As a teacher, he won the respect of his pupils and aroused an enthusiasm that secured the best work. While at Vineland, he was president of the Pomological Club, which gained largely through his influence, more than a national reputation. While at Iowa City, he worked very successfully with bees, for the rest and recreation. At this time he wrote a very fascinating book, *Blessed Bees*, which, though fiction, was replete with information and passed through four editions. As a preacher Dr. Clute was reverent, earnest and eloquent, always a hard student, not only of history and literature, but of nature as well.

"He was scholarly in his habits, and clean and true in his life. I need not speak to you of his quick response to duty's call. I must, however, give a page or two from the last chapter of his life. He lived near me, and I saw him often. He suffered great pain, and led a lonely life. At the last, he was in a great room at the Soldiers' Home, and so knew no privacy or retirement. To one of his peculiarly sensitive nature, this must have been a severe trial. Yet he made no murmur, and never was he more loved and respected by those closest to him than in those last sad days when pain and solitude laid heavy hands on him. He exemplifies in the last hours how real Christian character may glorify life, even in the dark valley of the shadow of death."

The above quotation is chiefly copied from a report by A. J. Cook, '62.

President Oscar Clute was of good size, well proportioned, slightly stooping, rather slow of motion, dignified, full dark beard, streaked with gray, exact in speech, with a positive air, not particularly jolly or easily approached, not demonstrative, sometimes giving offense through objections made to a course pursued. Children: William Merrylees, Oscar Charles, Lucy Merrylees, Katherine Spencer, Edward Hale, Marion Morrill.

LEWIS GRIFFIN GORTON, M. S., was president of Michigan Agricultural College from August, 1893 to December 1895, and director of the Experiment Station for most of the same period.

He was born 1860 at Waterloo, Jackson County, Michigan and grew up six feet three inches high, with a proportionate weight of two hundred and fifty pounds. He was educated in the common school, graduated from the Chelsea high school, and the State Normal at Ypsilanti, at the age of nineteen. He soon began and continued to teach for three years, chemistry, astronomy, physics and physiology in the Detroit high school, when he accepted a similar situation in the Military Academy at Orchard Lake. Soon after for two years he served as principal of the Duffield school, Detroit; then he became principal of the Bishop school where he remained



LEWIS GRIFFIN GORTON.

seven years. From this school he next became president of the Michigan Agricultural College.

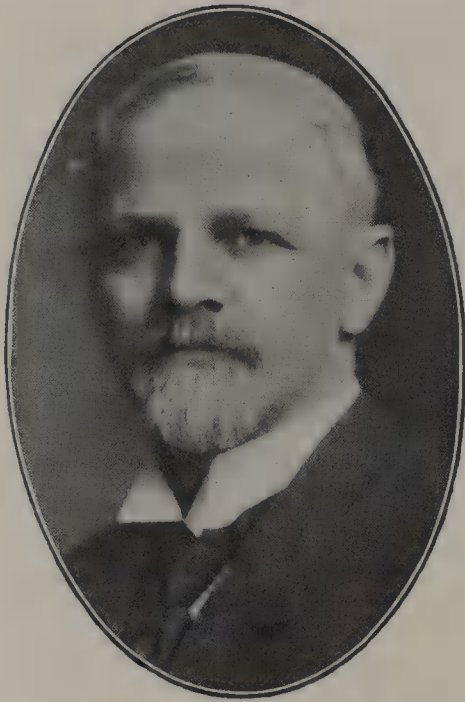
He was married and had one son.

JONATHAN LEMOYNE SNYDER was born on a farm near the village of Slippery Rock, Butler county, Pennsylvania, October 29, 1859. His name indicates that he is of Pennsylvania Dutch descent but in reality a Scotch or Irish name would more truly represent his ancestry.

His early life was not different from that of other country lads who belonged to large families of the old school, except perhaps that there was in this family an inordinate ambition for education. They taught school and assisted one another until ten of the eleven children received college training. The subject of this sketch prepared for college at Grove City Academy and took his college course at Westminster College, graduating with the class of

1886. He was one of the leading athletes of his college days and won distinction as the winner of the annual inter-society debate which was considered the highest literary honor attainable by an under graduate.

After graduation he was principal of a village school for one year from which position he was called to the superintendency of the schools of his native county. In this position he at once set about to increase the efficiency of his teachers. To accomplish this end he entered heartily into the project of establishing in his home village a State Normal School which has for a number of years ranked as one of the leading normal schools of the state. He also introduced a graded course of study into the rural schools which was an advance step in those days. While he was elected for a term of three years, he resigned before the completion of his second year to accept



JONATHAN LE MOYNE SNYDER.

the principalship of the Fifth Ward Schools of Allegheny, now known as North Side Pittsburgh.

After seven years of service in this position he resigned to accept the presidency of the Michigan Agricultural College. His election dates from February 11, 1896.

His work as school principal was marked particularly by the introduction into his school of the free kindergarten, manual training and home economics. A separate building was erected for manual training which was the pioneer manual training building in that section of the country.

Mr. Snyder after graduation pursued studies in psychology and philosophy and upon the completion of a graduate course he was awarded the degree of Doctor of Philosophy by his Alma Mater. The University of Michigan in 1908 conferred upon him the degree of Doctor of Laws.

President Snyder was married on June 15, 1892 to Clara Maud Mifflin of North Washington, Pennsylvania. He insists that whatever degree of success he may have attained has been due largely to her inspiration and council. They have three sons born in 1893, 1898 and 1900.

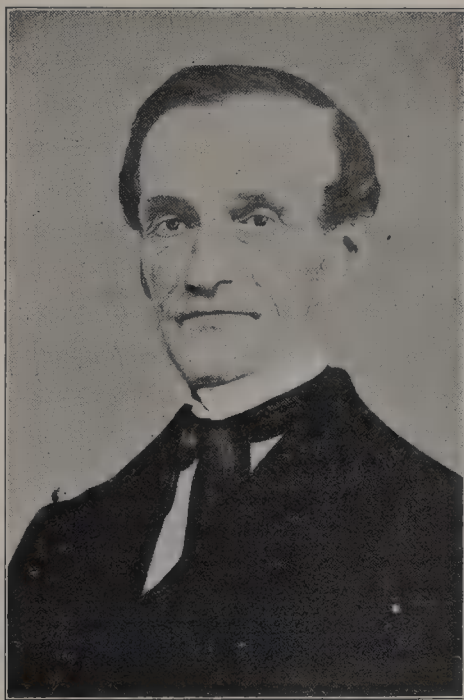
During his administration of nearly twenty years the students in attendance has increased from approximately 300 to now over 2,000.

Children: Robert, '12, LeMoyne and Plummer.

FACULTY.

CALVIN TRACY, A. M., Professor of Mathematics, was born at Norwich, Connecticut, Jan. 2, 1805, living on his father's farm and attending the country school until he was twenty-one years of age, when he attended college and graduated; he taught in Norwich Academy. He went to New York, and there married (1) Miss Rowell, who survived but few years. While in New York he wrote a complete set of arithmetics.

He was the first professor chosen for the Agricultural College; served as



CALVIN TRACY.

professor of mathematics 1857-60. A little prior to leaving the College, March 1, 1859, he married (2) Harriet A. Sessions, a teacher in Misses Rogers' Female Institute, Lansing, Michigan. While at the College he shot several deer as they foraged on the young wheat.

He resigned his position at the College, owing to ill health, and for the rest of his life conducted an insurance office in North Lansing. He had one son, M. S. Tracy, who lives in Fort Wayne, Indiana (1913).

He was a prominent member of the Presbyterian Church. Professor Tracy died at Lansing, July 28, 1889.

Professor A. J. Cook has this to say of Calvin Tracy:

"Among the first of the professors whose pleasure it was to throw light into dark places, was our tall, eager, enthusiastic professor of mathematics, Professor Calvin Tracy. He had written books that had won high praise. His health was poor, as indigestion was his constant companion. He told me

more than once that he did not know what it was to feel well, and yet how ready and cheerful he was to help us over hard places! He was not only a close student but he was so transparently true that his character rooted in the hearts and lives of his young companions, so that as they went forth they had a firm grip on the best things of life. Such genuinely Christian character as guided the life of Professor Tracy never fails or ceases to influence every life that it touches, to higher thought and endeavor. It was jocosely remarked that Professor Tracy loved the truly good boys and the digs; with his frail health and love for good scholarship, one can easily imagine him possessed of such prejudice. Can anyone who participated in those memorable geometry contests ever forget the ecstatic pride of our teacher, as the rapid, accurate work was reeled off as by a whirlwind? No one can know of Professor Tracy's life and thorough, earnest work, and not ascribe to him a large place in giving to the College its trend and temper.

"As a teacher, Professor Tracy had that indefinable something that we call tact, aptness, faculty. To his wide knowledge and clear statement and exact method he added the capability so to present his subject as to interest and inspire his students. In the teacher knowledge is essential, clear speech and orderly method are essential, but all these fail when faculty is lacking.

"There was that about him that made the subject he was teaching a living subject to his students. His strong personality was projected into his subject, and so his students were led not only to respect for the teacher, but to that deep interest in the subject that inspired them to hard work, and that led by and by to noble accomplishment."

LEWIS RANSOM FISK, Professor of Chemistry. (See Acting President.)

HENRY GOADBY, M. D., Professor of animal and vegetable physiology and entomology, 1857-59, was in active service during the year in 1859. He prepared a well illustrated book good for that early period, published by Appleton & Co., a copy of which may be seen in the College library. He was educated in England, and, as President Abbot told the writer was very skillful in dissecting insects and larger animals. Before the close of his second year, death overtook him.

In a report of the Superintendent of Public Instruction for 1859, appeared the name of Dr. Goadby in connection with that of Professor Abbot, among the lecturers at teachers' institutes.

He was a fellow of the Linnean Society of London; corresponding member of the Albany Institute of New York State; honorary member of the Literary and Historical Society of Quebec; primary dissector of minute anatomy to the Royal College of Surgeons of England.

He had a wife while at the college and had at least one child.

James Gunnison of Lansing was a student at the College when Dr. Goadby was professor. He said: "Dr. Goadby was a wonderful man, a remarkable teacher; he went out with his students collecting and telling all sorts of interesting things and taught us to observe. He showed us the circulation of the blood in the web of a frog's foot."

In conversation, he repeated several times, "Dr. Goadby was a wonderful man, very skillful."

DAVID PORTER MAYHEW, Professor of Natural Science, 1857. He was born in Columbia County, New York, 1817; prepared for college by Dr. David Porter; graduated from Union College 1837; 1838 took charge of Louisville Academy, Louisville, New York, continuing for about 15 years;

one year each spent in schools of Columbus, O., and Cleveland, O.; January, 1856, began work in the Normal School, Ypsilanti, as teacher of science; 1866-71 served as principal, in all 15 years at the Normal, leaving January, 1871, for Detroit, where he died in May 1888.

Although his name appeared as fourth in the list of professors, he was never in active service at the Agricultural College.

Most of the above brief account was furnished by Professor W. H. Sherzer, of the State Normal School.

ROBERT DODD WEEKS

ROBERT DODD WEEKS was born at Clinton, New York, April 4, 1819. He married (1) September 28, 1843, Elvira Jerusha Crafts of Whately,



ROBERT DODD WEEKS.

Mass.; she died at Lansing, Michigan, February 18, 1858; (2) September 8, 1859, Mary Ann, daughter of Nathan and Julia (Strong) Creene of Clinton, Michigan.

Mr. Weeks, like his father and brother, learned the printer's business, beginning at home under the instruction of his father; assisted in his father's school at the same time prosecuting his own studies; worked at his trade about two years in New York City, a part of the time in charge of an office; summer of 1843 he was on a farm in New York; after marriage resided in Whately, Massachusetts, farming on a small scale; assisted in his father's school 1845-6; taught a public school at Newark, New Jersey, 1846-1851; returned to his farm, remaining until 1856, then removing to Bowen's Prairie, Jones County, Iowa, where he bought a farm, on which he continued one year; in 1857 he was secretary and professor of English literature and farm economy in Michigan Agricultural College; autumn of 1857 resigned and was employed in the office of the auditor general of Michigan until February, 1860; appointed to a clerkship in the office of the Mutual Benefit

Life Insurance Co., Newark, New Jersey, which he held for many years; deacon in the Congregational Church at Whately and in East Orange, New Jersey; elder in the Presbyterian Church, Newark; deacon in Trinity Congregational Church of Orange; served on school committee in Whately. Author of "Jehovah Jesus," also of the New Testament, translated from the Greek, published by Funk & Wagnalls Co., New York, 1897, a copy of which was given to the library of M. A. C.; also author of a genealogy of the family of George Weeks of Dorchester, Mass., 1635.

Somewhat liberal in regard to the philosophy of religious doctrine, positive of the essential truths of Christianity; an early Abolitionist; a Republican from the foundation of the party; from boyhood an advocate of total abstinence from all intoxicating drinks, as well as from tobacco. From 1872



JOHN CLOUGH HOLMES.

resided until death in his own house, East Orange, New Jersey. Died February 23, 1898.

Children: William Rufus, died when about 3 years of age; Rufus Wells, Vice President of New York Life Insurance Co.; Lucy Raymond (Trimble); Robert Griswold, lawyer; George Franklin, an editor in San Francisco, California; Emma Roberts, adopted.

The items chiefly furnished by his son Rufus.

JOHN CLOUGH HOLMES.

JOHN CLOUGH HOLMES was born September 25, 1809, at Salem, Massachusetts. On August 30, 1840, he married Jane C. Palmer, born in Detroit, August 30, 1822, daughter of John and Jane Palmer. Mrs. Holmes died March 8, 1884, leaving no children. They attended the Presbyterian

Church. In person Mr. Holmes was of medium height, rather stout, with a round, pleasant face, clean shaven, very neat in dress, and exact in speech. They were very prompt and regular in their home at meals and in keeping engagements. He came to Michigan in 1835 and went to work in the store of John and Mason Palmer. He was a member of the firm of his father-in-law, John and Mason Palmer of Detroit, remaining with John Palmer after Mason Palmer withdrew from the firm. In 1846 the Detroit Horticultural Society was organized, Mr Holmes becoming president in 1847.

He was a member of the Board of Education of Detroit in 1848 and 1849; secretary of the Michigan State Agricultural Society from its organization in 1849 to 1857.

In 1852 he established the Farmers' Companion and Horticultural Gazette, afterward united with the Michigan Farmer; he was professor of horticulture and treasurer 1857-58; professor of horticulture and secretary of the Agricultural College 1860-62. Portions of these periods he was not on full duty, owing to the limited means at the disposal of the College and the primitive condition of the College farm.

He was a member of the Detroit Scientific Society in 1874 and its secretary from 1877; president of the Wayne County Pioneer Society in 1882, and was a member of the Michigan Pioneer and Historical Society and contributed to its publications for many years.

Portions of the above were supplied by Bryant Walker, attorney, Detroit.

Scattered through the early history of the Michigan Agricultural College, appears the name of John C. Holmes as the most important agent.

Michigan was the first to establish an agricultural college supported by state aid, because she happened to be able to include among her citizens J. C. Holmes, the enterprising and persistent secretary of the State Agricultural Society. Through his influence more than that of any other person or of all persons combined, his unceasing labor induced others to adopt his plans, thus an early establishment of the Agricultural College.

He not only urged the establishment of the Agricultural College, but he persistently advocated the establishment of a college separate from the State Normal School or the State University. Of his work, President Abbot said: "To no one man is the College so much indebted as to John Clough Holmes. Into the project of establishing the School of Agriculture and Horticulture he entered with singular zeal and devotion. He collected information from all quarters, and there were no features of organic law which he had not discussed with those best qualified to give advice, and none of them that do not show his shaping hand. During nearly the whole legislative winter of 1855 he was in Lansing diffusing a knowledge of the plan and awakening an interest in it and this was done at his own private expense. He did much to lay out and beautify the grounds and give the College 'a right start.' Mr. Holmes died at Detroit, December 16, 1887.

THEOPHILUS CAPEN ABBOT, A. M., LL. D., Emeritus professor of mental philosophy and logic, 1890-92. Professor of English literature 1858-60. Professor of civil and rural engineering and lecturer 1860-61.

Professor of history and English literature 1861-66.

Professor of mental philosophy and logic, 1866-89.

President, 1862-1884.

See Presidents.

GEORGE THURBER, M. D. The following is adapted from Professor A. J. Cook's contribution to the Semi-Centennial of Michigan Agricultural College.

"Dr. Thurber was a great favorite among all the students. The exceeding pleasure that came to me in the multitudinous walks with Dr. Thurber and the love of natural science that came as he opened the great book of Nature in his marvelous fashion, awaked in me a loving appreciation that has deepened with the years. Dr. Thurber's government work had given him rich opportunity to solve Nature's problems, and he improved them to the utmost. His telling service in the horticultural department, and his exceptional ability to make science clear and fascinating, constituted seed of the right kind, when agricultural education was first taking root. Except for his own



GEORGE THURBER.

lamentable failing for drink what a power for good he might have become, in this first Agricultural College."

S. M. Millard '84 said of him:

"From 1860 to 1863 Dr. George Thurber was professor of botany and horticulture. He was a genius, original, a great botanist, an old bachelor, and eccentric; to the student who showed any signs of talent for botany he was interested and devoted, but Dr. Thurber had no use for a stupid student. He was a scientist, but not a teacher in a college of miscellaneous students. His peculiar disposition caused him to have favorites among the students, which resulted in jealousy and indifference among those not favorites."

Professor Thurber was never married. He died April 2, 1890, at his home near Passaic, New Jersey.

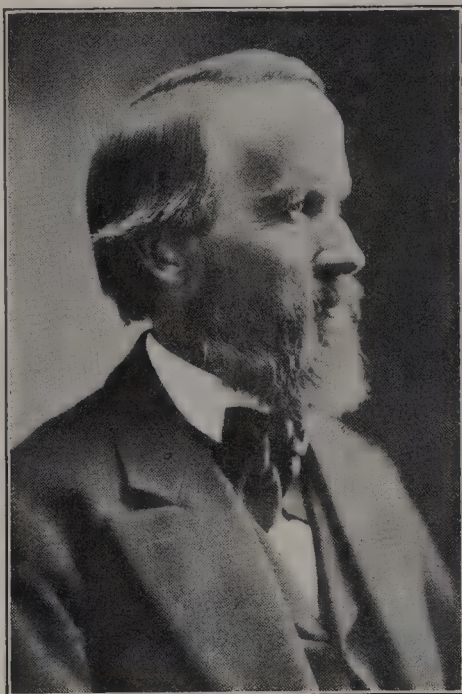
A service in memory of Dr. Thurber was held in the College chapel on Sunday, April 20th, at which the following persons participated: President Clute, Dr. Beal, Dr. Miles, Professor Cook.

The following is adapted from the *American Agriculturist*, 1890.

Professor George Thurber, A. M., M. D., was born Sept. 2, 1821, at Providence, Rhode Island. After leaving school and making preparation, he engaged in the drug business, during which time he devoted much time to chemistry and botany. He became intimate with Dr. John Torrey, Asa Gray and Louis Agassiz, and through their influence, in 1850 he was appointed a member of the United States and Mexican Boundary Survey for the purpose of studying the flora of that little known region.

One of the cacti collected was *Cereus Thurberi*, since extensively planted for its fruit on desert regions of North Africa.

A genus of grasses, *Thurberia*, was named for him by Dr. Bentham. From 1853 to 1856 he was employed in the United States Assay Office. The



MANLY MILES.

following three years he spent chiefly in the study of his botanical collections.

He became editor of the *American Agriculturist*. By competent judges he was considered the most accomplished horticultural writer of his time. Besides contributing large numbers of editorials and notes concerning scientific topics in great variety, his "Notes from the Pines" and his "Doctor's Talks" attracted much favorable comment.

The degree of Master of Arts was conferred by Brown University and Doctor of Medicine by the New York Medical College.

Dr. Thurber rewrote *Darlington's Agricultural Botany* with the new title *American Weeds and Useful Plants*, prepared many articles on botany for *Appleton's Cyclopaedia*, and described the grasses for the *Botany of California*, known as a portion of the *Geological Survey*. His judgment was sound, his memory excellent.

MANLY MILES, M. D. Professor of practical agriculture and superintendent of the farm, 1865-75.

Professor of zoology and animal physiology, 1861-65.

The following is chiefly adapted from a sketch in the *Popular Science Monthly*, vol. 54, April 18, 1899.

To Dr. Manly Miles belongs the distinction of having been the first professor of practical agriculture in the United States, as he was appointed to that newly instituted position in the Michigan Agricultural College in 1865.

Professor Miles was born in Homer, Cortland County, New York, July 20, 1826. When Manly, the son, was eleven years old, the family removed to Flint, Michigan, where he employed his time in farm work and the acquisition of knowledge and later in teaching. He studied geometry while following the plow, drawing the problems on a shingle, which he tacked to the plow-beam. Whenever he was missed and inquiry was made about him, the answer invariably was, "Somewhere with a book." He was most interested in the natural sciences, particularly in chemistry in its applications to agriculture, and in comparative physiology and anatomy, and was a diligent student and collector of mollusks. He was also an accurate and reliable student of birds, fishes, reptiles and minerals.

Choosing the profession of medicine, Mr. Miles was graduated M. D. from Rush Medical College, Chicago, in 1850, and practiced till 1859. In the meantime he became greatly interested in the subject of a geographical survey of the state, for which an act was passed and approved in 1858. In the organization of the survey, in 1859, he was appointed assistant state geologist in the department of zoology; and in the next year was appointed professor of zoology and animal physiology in the Michigan Agricultural College at Lansing.

He was a "born collector," as the phrase is, and his keen eyes, tireless industry, and mathematical precision led to the accumulation of thousands of valuable specimens and more valuable observations."

Mr. Bryant Walker, of Detroit, who knew Professor Miles well in later years, and had opportunity to review his zoological work, regards the part he took during this service in developing the knowledge of the fauna of the state as having been very prominent. "The catalogues he published in the report for 1860 have been the basis for all work since that time."

Mr. Walker believes that "In general it can be truthfully stated that Dr. Miles did more to develop the general natural history of that state (Michigan) than any other man either before or since he completed his work as state geologist."

With a thorough knowledge of science and familiarity with practical agriculture, Professor Miles had an inclination to enter this field, and this inclination was encouraged by President Abbot and some of the members of the Board of Agriculture. He had filled the professorship of zoology and animal physiology with complete success, and had he consulted his most cherished tastes alone he would have remained there, but he gradually suffered himself to be called to another field. The duties of "acting superintendent of the farm" were attached to his chair in 1864. In 1865 he became professor of animal physiology and practical agriculture and superintendent of the farm; in 1869 he ceased to teach physiology and gave his whole time to the agricultural branch of his work; and in 1875 the work of the superintendent of the farm was consigned to other hands, and he confined himself to the professorship proper of practical agriculture.

Professor Miles was even more popular than before with students, and created an enthusiasm for operations and labors of the farm which had been regarded before as a disagreeable drudgery. The students "were never

happier than when detailed for a day's work with Dr. Miles in laying out some difficult ditch or surveying some field."

Professor Byon D. Halsted, of the New Jersey Agricultural College Experiment Station, who was an agricultural pupil of Dr. Miles in Lansing, characterizes him as, "Having been a full man who knew his subjects deeply and fondly. In those days, I am safe in writing, he represented the forefront of advanced agriculture in America. He was in close touch with such men as Lawes and Gilbert, of Rothamstead, England, the famous field-crop experimenters of the world, and as for his knowledge of breeds of live stock and their origin, Miles' Stock-Breeding is a classic work. Dr. Miles, in short, was a close student, a born investigator, hating an error, but using it as a stepping-stone toward truth. He did American farming a lasting service, and his deeds live after him."

It was next to impossible for Dr. Miles to work intimately with others without having his own way, hence he remained only a few years in four different positions. He was arbitrary and was forced to resign his position in 1875, and then accepted, at an increased salary, the professorship of agriculture in the Illinois State University. Thence he removed to the Houghton Farm of Lawson Valentine, near Mountainville, New York, where he occupied himself with scientific experimental investigation. He was afterward professor of agriculture in the Massachusetts Agriculture College, at Amherst.

When Professor Miles began to teach in the Michigan Agricultural College, the "new education" was new indeed, and the text-book method still held sway. But the improved methods were gradually taking the place of the old ones, and Professor Miles was one of the first to co-operate in them, and he did it with effect. He used text-books, "but his living word," President Clute says, "supplemented the book; and the animal from the farm, under his knife and ours, the shells which he led us to find under the rotten logs and along the rivers and lakes, the insects he taught us to collect and classify, the minerals and fossils he had collected on the geological survey of Michigan, all were used to instruct and inspire his students, to cultivate in them the scientific spirit and method."

Among the more important books by Professor Miles are Stock-Breeding, which had a wide circulation and has been much used as a class-book; Experiments with Indian Corn, giving the results of some important work which he did at Houghton Farm; Silos and Ensilage, which helped much in diffusing knowledge of the silo in the times when it had to fight for recognition; and Land Drainage. Of his papers, he published in the Popular Science Monthly articles on Scientific Farming at Rothamstead; Ensilage and Fermentation; Lines of Progress in Agriculture; Progress in Agricultural Science; and How Plants and Animals Grow. To the American Association for the Advancement of Science he contributed papers on Energy as a Factor in Nutrition; and Limits of Biological Experiments. Other articles in the American Naturalist were on Animal Mechanics and the Relative Efficiency of Animals as Machines. In the Proceedings of the American Educational Association is an address by him on Instruction in Manual Arts in Connection with Scientific Studies.

He was married in 1851 to Miss Mary E. Dodge, who remained his devoted companion until his death, which occurred February 15, 1898. In July 1913, Mrs. Miles lived in Lansing, Michigan.

Manly Miles:—A dry goods box lay at North Lansing depot, marked

"M. Miles." An Irishman, reading the address, innocently remarked: "I wonder how many miles that is."

In his report for 1906, President Snyder says:

"Manly Miles was connected with the institution as a professor from 1861 to 1875. Much of his work was at least a quarter of a century ahead of his time. His experiments in lamb-feeding in 1866 would be a credit to any experiment station at the present day. Who was Doctor Miles? Dr. Burrel, Vice-president of the University of Illinois, in speaking of the call extended by that institution to Dr. Miles in 1870 says, 'No one else in America at this time enjoyed anything comparable with Dr. Miles in the public estimation of competency to give instruction in scientific agriculture. It was he who had been called the only professor of the subject in the country.'"

In 1873 his favorite driving team consisted of a small light bay chub of a horse with heavy tail, carrying his head low—seldom breaking from a trot; his "mate" was a rather rangy, though not large, Arabian, spotted, with light mane and tail, lame in one hind leg. His gaits were numerous, conflicting, changeable, but never going easily beside the bay. The team was the laughing stock of all lovers of horses.

In 1871, earlier and later, while Dr. Miles was at the College, when the legislature was in session, he made it his business to look after the College bills, making trips to town several times a week for a month or more. He told the writer long stories about his management and the tricks he adopted to get the bills through. These manoeuvres didn't tend to make it easier to get bills through in succeeding legislatures.

In the biography of Dr. Miles reference is made to him as arbitrary and underhanded. In the M. A. C. Record, vol. 3, April 5th, President Clute says: "His work was not appreciated, and he was not sustained. Weary and disappointed, he resigned in 1875." The writer explains his resignation in another way, as he was professor of horticulture at the time. Governor Bagley was in his second term; he had selected through his four members of the Board four out of six W. H. P. Marston as secretary, a most unfortunate appointment. Mr. Marston learned much of Dr. Miles and told the Governor, who also gathered later from other members of the Faculty. Dr. Miles' plans for work were generally appreciated, and his ability recognized, but the Board could not endure the man's methods of work with his associates. He was defiant when asked to resign, because he had a standing offer to go to Illinois at a higher salary.

ROBERT CLARK KEDZIE, A. M., M. D., D. Sc., LL. D., was born in Delhi, New York, January 28, 1823 and died at Agricultural College Michigan, November, 7, 1902. He emigrated with his parents during the year 1826 to the valley of the Raisin in Lenawee County, Michigan. When seventeen, he entered Oberlin College, working his way through, graduating in 1846. He then took charge of Rochester Academy, Michigan, for two years; entered the Medical College of the University of Michigan and received the degree of M. D. with the first class of that institution in 1851. He practised medicine in Kalamazoo and Vermontville for eleven years; served as surgeon in the 12th Michigan Infantry for one year and then began his long career as professor of chemistry at Michigan Agricultural College on February 25th, 1863, a position which he held continuously for over thirty-nine and one half years.

In 1898 the Michigan Agricultural College conferred upon him the degree

of D. Sc.; and in 1901 the University of Michigan conferred the degree of LL. D.

He was president of the Michigan State Board of Health from 1877-81, and for some years very active in the work of the society; president of the Society for the Promotion of Agricultural Science from August 1887 to August 1889, and an able contributor to the Proceedings.

He was a member of the house of representatives of Michigan in 1867; president of the Michigan Medical Society in 1874; president of the American Public Health Association in 1882; active in the Sanitary Council of the Mississippi Valley; vice-president of the American Medical Association; chairman of the Section of Chemistry in A. A. A. S. in 1891; president of the Association of Agricultural Colleges and Experiment Stations in 1899.



ROBERT CLARK KEDZIE.

From 1888 to 1894 he experimented and ascertained that southern Michigan was well adapted to growing sugar-beets; in 1885 secured the passage of a law providing for the inspection of commercial fertilizers; assisted in securing the passage of the act establishing a state food and dairy commission, and was the first appointed state analyst.

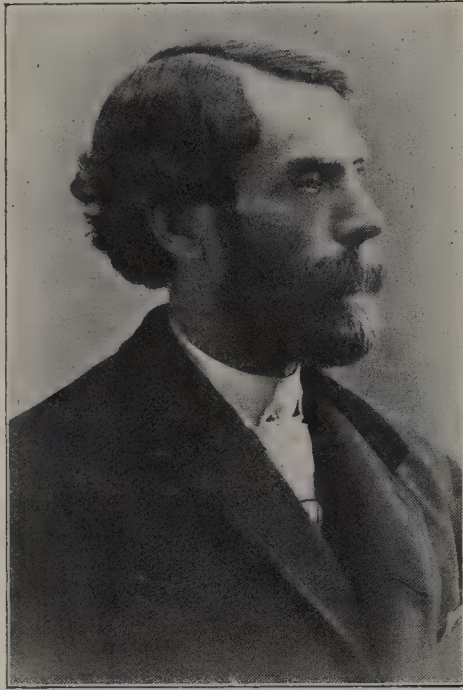
He was a favorite teacher; exposed many frauds in the sale of articles of food; in fact, he was ever on the watch, ready to fight frauds of all kinds.

Dr. Victor C. Vaughan, in characterizing his career said: "I know of no man who has done so much for the betterment of human life. He was the first to investigate the dangers of arsenical wall papers and to inaugurate legislation looking to the discontinuance of their manufacture. He also investigated the dangers of inferior illuminating oils, and legislation safeguarding the people against them was enacted. Dr Kedzie has been justly called 'the father of the beet sugar industry in Michigan.'

"As a member of the State Board of Sanitation he was a leader. He accomplished things. The state of Louisiana, through his efforts, inaugurated a quarantine at New Orleans, the first thing of its kind in the world; and when Asiatic cholera appeared at the port of New York, it was largely because of his agitation that it was possible to say, 'Thus far shalt thou come and no farther.'"

Children: William K., '70; Robert F., '71; Frank S., '77.

ALBERT N. PRENTISS, M. S., was enrolled as an advanced student late in 1857. With some periods of interruption, caused by ill health or teaching, he continued as a student until the fall of 1861. He was thus a student at the College in the first part of its formative period. Among his fellow



ALBERT N. PRENTISS.

students he was, from the first, well liked, but his reserve of manner, which was thrown off only with the few, prevented him from being popular in the broad sense of that word. But the boys trusted him entirely and respected him fully for his ability, his industry, and his thorough genuineness.

With the professors he was always among the first, for his clear and strong faculties, his observance of every duty, and his thorough self-respect commanded their attention. The quiet force of his character soon gained their confidence and he was chosen by Professor John C. Holmes, and later by Professor George Thurber, as foreman of the gardens.

The boys of the class of '61 were to graduate in November. In September Captain E. P. Howland appeared at the College, seeking men for his corps of engineers. After some consultation among faculty and students, it was agreed that members of the senior class could enlist, be absent from the College the remainder of the year, and be granted their diplomas in November.

Mr. Prentiss and others enlisted in Captain E. P. Howland's Topographical Engineers under J. C. Fremont.

Fremont's successor said he had no need of a Company of Topographical Engineers and they were allowed to choose between joining some other branch of the service or being mustered out.

Prentiss spent the year in teaching in the high school at Kalamazoo. In the spring of 1863 he was chosen instructor in botany and horticulture at M. A. C., and returned a few weeks later to the scenes of his student days. He had full charge of the department and it began at once to show evidence of his clear and systematic methods. The students in his classes were deeply interested in their studies, their garden work was done with pleasure, for though the conditions for such work were then comparatively crude, the boys recognized in Professor Prentiss one who knew what he was about, who desired to give them the best instruction in science and the best training in practical matters, and who respected their rights and feelings.

In 1869 he was called to the chair of botany and horticulture in Cornell Univeristy, where he remained for nearly thirty years.

Oscar Clute, instructor of mathematics at the time Prentiss was instructor in botany, gives a glowing account of their camping together at Park Lake, during the summer recess, "to fish, to hunt, to boat, to bathe, to botanize, to loaf and invite our souls. How full of calm pleasures were the days and nights of our life in camp!"

It is seldom that one has met a person whose whole mental and spiritual atmosphere was so pure and wholesome as was that of Albert N. Prentiss. In all the varied scenes and associations of student, soldier, and professorial life he showed always the clean mind and heart. His sensitiveness led to an almost undue fastidiousness of speech and conduct. No one at heart was fuller of good comradeship than he, but to many people he seemed reserved and formal. Only after friendship and confidence had conquered this reserve did the warm-hearted man, with genuinely human qualities, appear. Then he was frank, genial, sympathetic. Yet it is to be said that only with a few was he ever able entirely to throw off his reserve. He could not "carry his heart upon his sleeve for daws to peck at."

Prentiss liked his work as horticulturist and as teacher. The true horticulturist is a lover of nature; he rejoices in her varied forms, in her enchanting tints. Added to this love of nature he must have the artistic genius to work with nature in so disposing flowers and shrubs and trees and grasses and brooks and ponds and distant gleam of stream or lake or sea—all in a marvelous setting of cloud and sky—as to make the whole landscape a picture that throbs with the spirit of beauty.

In teaching, as in everything else, Prentiss went quietly and intently about his work and did the work. He knew the subjects he taught; he had a clear mind without any fogs of conceit or superstition; his command of the English language was excellent; he could understand and appreciate the difficulties of the student. He went directly to the point, roused the interest of his students by his own quiet earnestness, led them to work with eagerness. His lecture platform was never a place for browbeating the timid or the incompetent, or for taking an unfair advantage of some slight lapse of duty and holding the delinquent up to ridicule. Nor were his lectures strewn with stale stories and ancient jokes whereat the afflicted students were expected to laugh or else suffer diminution in their daily marks. In his classes there were no traditions handed down from year to year as to passages in certain

lectures where the fishy odor would demand the tribute of their clapping hands.

Prentiss was mainly a worker rather than a speaker or writer. He taught well, but he wrote very little about teaching. He was an accomplished botanist but the journals have few contributions from his pen.

He married Adaline Eldred in Dryden, New York, on April 2nd, 1878. She graduated from Cornell University in 1883 with the degree of B. S.; in 1885 with the degree of M. S.; attended Elmira College, New York, 1861-63; Philadelphia Medical College for Women 1872-73; attended the New York Medical College in 1876, securing the degree of M. D.

Perhaps his reticence was, in a measure, due to ill health. He was never robust. Scarcely was his daily strength sufficient for the daily work of the classroom and campus. He used what power he had in doing what he was in honor bound to do.

Professor Prentiss died at his home on the Cornell campus at Ithaca, New York, August 15th, 1896.

(The above is mostly adapted from President Oscar Clute.)

S. M. Millard of '64 said of him:

"In personal appearance Professor Prentiss was tall, slim and frail; refined in contact with his fellow students, always gentle and approachable. He was looked upon as a superior in intellect and in personal bearing. He had no enemies.

"As I look back upon his personality and upon his native characteristics I have of late years placed him with the type of man illustrated by Robert Louis Stevenson—physically weak, mentally dreamy and poetical in thought.

Prentiss may be said to have been original. He never seemed to like the harness of a professor; he was a student in his own original methods."

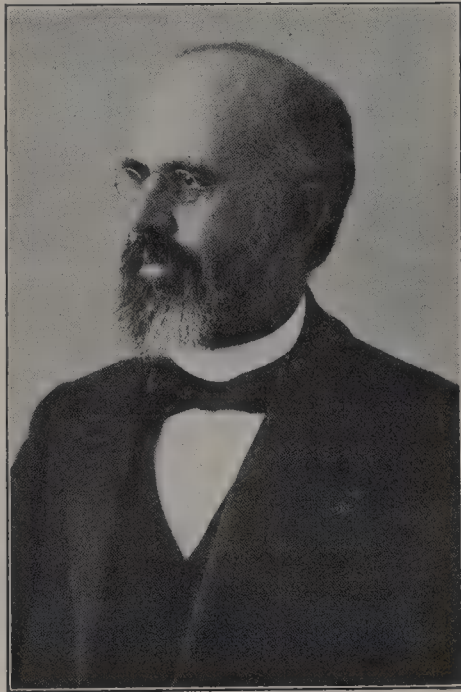
GEORGE THOMPSON FAIRCHILD, A. M., the youngest of a family of ten children, was born October 6, 1839, in a small frontier town of Brownhelm in northern Ohio. He died at Columbus, Ohio, March 16, 1901. His parents, Grandison Fairchild and Nancy Harris, were Puritans. Owing to delicate health, as a child he received private instruction, and later went to Oberlin College. After finishing the classical course at that institution, he studied Theology. On November 26, 1863, he married Charlotte Pearl Halstead, a Hicksite Quaker from western New York, herself a graduate of the College.

From 1865 to 1866 George T. Fairchild was instructor in English literature, 1866 to '79 professor of English literature in the Michigan State Agricultural College, and acting president from 1872 to '73. This position he filled and in addition filled the offices of assistant secretary of the faculty, librarian, teacher of moral philosophy and French, professor in charge of the students' rhetoricals and professor in charge of the students' curriculum of study. While thus busily engaged, he also built up the College library and organized a plan of student government. In 1879 he was called to the presidency of the Agricultural College of Kansas, which was then in its very beginning. Eighteen of the best years of his life he devoted to developing this institution and to making its influence felt through the State Board of Education, the Association of Agricultural Colleges and Experiment Stations of which he was at one time president, and the National Teachers' Association of which he was president of the section on industrial education.

The part taken by President Fairchild in the framing of the Morrill Act

is not generally known. This bill was opposed by the Grange, on the ground that the funds of the agricultural colleges, which came from the sale of public lands had hitherto not been used for the teaching of agriculture, but for other things in which they are not interested. Dr. Fairchild framed the clause, limiting the use to be made of such funds, which secured the passage of the Act.

In 1897, the Populist party for a brief period controlled the Kansas state legislature and because, as individuals, the members of the faculty of the college did not agree with the Populistic ideas, the Board of Regents deliberately terminated the official connection of every member of the faculty. President Fairchild resigned and did everything in his power to prevent this political invasion from injuring the institution to which he had given



GEORGE THOMPSON FAIRCHILD.

so many years of his life. When the revolution was reversed he was urged to resume his position, but declined, with the remark that "A new man can do more for the College than I can." Upon his retirement from active work in Kansas, he spent a year in the preparation of his book, *Rural Wealth and Welfare*. Later he took up the task of organizing the industrial and agricultural departments of Berea College in Kentucky. It was while vice-president of this institution that he was stricken with the disease which led to an operation in Columbus, Ohio, under which he died.

Professor A. J. Cook says of him: "He will ever be most affectionately remembered by the students of those thirteen years as a ripe scholar, a thorough, accurate teacher, and, best of all, as a Christian gentleman whose faith was ever shown by his works. There was a universal lament when he was called to a higher place in a sister college."

While George was president at Kansas Agricultural College his brother Henry was president of Berea and his brother James at Oberlin.

To illustrate his unselfishness: at one time while president of Kansas Agricultural College, the Board voted to raise his salary, which he declined to accept, with the remark that the professors of the College needed the money more than he did.

Much of the above was furnished by his son, David G. of Washington, D. C.

ALBERT JOHN COOK, M. S., D. S., was born on his father's farm near Owosso, August 30, 1842. His father, Ezekiel Cook, was a native of Eastern Massachusetts; his mother, Barbara Ann (Hodge) Cook, was born at Albany, New York. Received B. S. from Michigan Agricultural College, 1862; M. S., 1865; D. Sc., 1905; studied at Harvard 1867-'68; married (1) Mary H. Baldwin of Dayton, O., June 30, 1870; (2) Mrs. Sarah Eldredge, of Pasadena,



ALBERT JOHN COOK.

California, July 3, 1897. Instructor in mathematics, 1867-69; professor of zoology and entomology, 1868-93; curator of the general museum, 1875-93; entomologist of the Experiment Station, 1888-91, Michigan Agricultural College; professor of biology, Pomona College, California, 1893-1911. Conductor of university extension work in agriculture, University of California, 1894-1905; first to make kerosene emulsion (1877) and to demonstrate and advocate the use of the arsenites as a specific against the codling moth, in 1880. While in Michigan he was a member of the society for the promotion of agricultural science.

Author: Manual of the Apiary; Injurious Insects of Michigan; Silo and Silage; Maple Sugar and the Sugar Bush; Birds of Michigan. Address: Sacramento, California. In religion, Congregationalist; politics, Progressive Republican. Children, Hon. Albert Baldwin, born Aug. 11, 1873, class of '93; Katherine E. (Briggs), born Jan. 3, 1875, class of '93.

Professor Cook is an optimist, a genial teacher, a tremendous enthusiast in his work with his students, a Christian gentleman. He was of eminent service to the Michigan State Horticultural Society and one of the best men at a farmers' institute the writer has ever known. In 1911 he was appointed State Commissioner of Horticulture for California, with headquarters at Sacramento. In 1913, the alumni of the College contributed the money to pay for a portrait which was presented by one of his pupils, Hon. L. Whitney Watkins.

Dr. Cook furnished some of the above items.

WILLIAM WARNER TRACY, M. S., D. S., son of Stephen Tracy of Hartford,



WILLIAM WARNER TRACY.

Connecticut, and Alice Hewitt (Dana) Tracy, was born at Hudson, Ohio, May 21, 1845.

He married (1) Mary Bartlet Woodbridge of Massachusetts, November 18, 1870. (2) Mattie Flanduan, March 3, 1903.

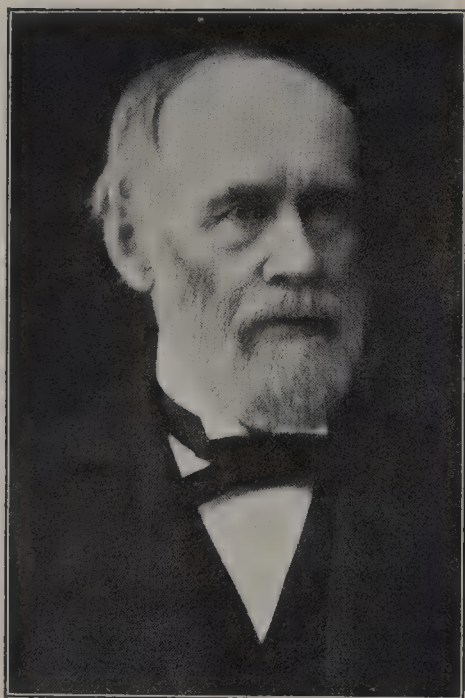
Mr. Tracy was educated at Phillips Academy, Andover, Mass., and at Michigan Agricultural College, graduating in 1867 with the degree of B. S.; in 1870, M. S., in 1907, D. Sc.

He is a Protestant with no political affiliations. He was foreman of the conservatory, 1868; instructor in horticulture and superintendent of the grounds, 1869-70; professor of horticulture and superintendent of the gardens, 1870-72; seed growing at Old Mission, Michigan, 1873, for seven years, superintendent of seed growing for D. M. Ferry and Company, for 28 years; now an expert of vegetables and annual flowers. At one time he had a son in each of four classes, freshman, sophomore, junior and senior. Children: William W., '93; Harry W., '94; Stephen W., '96; John E. W., '96; Katherine

W., Alice W., George W. Address: U. S. Department of Agriculture.
Dr. Tracy supplied some of the facts above used.

WILLIAM JAMES BEAL, Ph. D., D. S., son of William Beal and Rachel S. (Comstock) Beal, born 1833, March 11, Adrian, Michigan; married, 1863, September 2, by William Rhodes, Hannah A. Proud, daughter of John and Ann (Moore) Proud, farmers, Medford, New Jersey and Rollin, Michigan; Hannah A., born 1837, April 28, Medford, New Jersey; died December 22, 1909, East Lansing, Michigan.

W. J. Beal's boyhood was spent on the farm with a year in the grist mill; attended Raisin Valley Seminary and Lodi Academy; entered the classical course of the University of Michigan in 1855, graduated 1859 with degree



WILLIAM JAMES BEAL.

of A. B.; taught natural sciences in Friend's Academy, Union Springs, New York, 1859 to March 1861; entered Harvard University 1861, to study with Asa Gray, Louis Agassiz and Jeffried Wyman; 1863 to 1868 teacher in Howland Institute, Union Springs, New York, excepting one semester at Harvard in 1865, where he graduated with the degree of S. B.; professor of natural history, 1869-71, at the old Chicago University and lecturer in several schools; 1870, July 9, lectured in botany at Michigan Agricultural College; professor of botany and horticulture, 1871-81; professor of botany and forestry 1881-1902; professor of botany 1902; of a correspondence university, Ithaca, New York and Chicago, 1898; Sc. M., Chicago University, 1875; Ph. D. (Hon.) University of Michigan, 1880; D. Sc., Michigan Agricultural College, 1905; Fellow A. A. A. S., president of Section F, 1888 and first president of the Botanical Club of that society; first president of botanists of United States Experiment Stations, 1888; first president of Michigan Academy

of Science, 1894; first president of the Society for the Promotion of Agricultural Science, 1880; secretary of the American Pomological Society, 1881-85; president of the State Teachers' Association, 1882, and of the college Section, 1893; director of the State Forestry Commission, 1888-92; member of the Botanical Society of America; lecturer Capitol Grange 540 for five years; maintained a grass garden, 1873-1910; a botanic garden, 1877-1910; an arboretum, 1873-1910; a weed garden for 20 years; installed a botanical museum, 1880-1890; taught botany over 40 years, 1870-1910.

His books: *The New Botany*; *Grasses of North America*, 2 vols.; *Seed Dispersal*; *General Catalogue of the Agricultural College*; *Glossary of Botanical Terms*; 9 *Elementary Science Bulletins for Schools*; 2 *Weed Bulletins*; *Michigan Flora*. The alumni furnished a portrait in 1913 which was personally presented to the college by Hon. J. W. Beaumont.

For further details see his report in the Board of Agriculture for 1910.

Mrs. Beal was connected with affairs of the Michigan Agricultural College for nearly forty years, when it was new and struggling with only six professors. Few of the students of to-day, (1909) can form any conception of how much Mrs. Beal meant to it. Cut off by three miles of rough road, the College was forced to live much to itself. Its life was that of a large family and of that family many of the students remember Mrs. Beal, truly, as the mother. She cheered many a homesick boy; she watched faithfully at the bedside of more than one that was sick. Her home was always open and at time of reunion, always crowded. At one gathering she moved, with her husband, into the attic of the botanical laboratory, that there might be more room for company in her home. In the community she was a leader in deeds of charity to the poor and afflicted. In late years she was a member of the King's Daughters, who in 1912 endowed a room in the Lansing Hospital in her name.

Children: Jessie Irene, '90, born 1870. (Mrs. Ray Stannard Baker.) Infant son, born 1873, June 3, North Lansing, Michigan; died 1873, June 4.

OSCAR CLUTE, M. S., professor of mathematics, 1865-67.
(See President.)

ALFRED BUCK GULLEY, son of Alfred G., of Rhode Island, and Mina (Buck) G., of New York, was born December 22, 1819, at Potsdam, New York.

He married Sophia Augusta Abell, at Dearborn, Michigan, December 6, 1846.

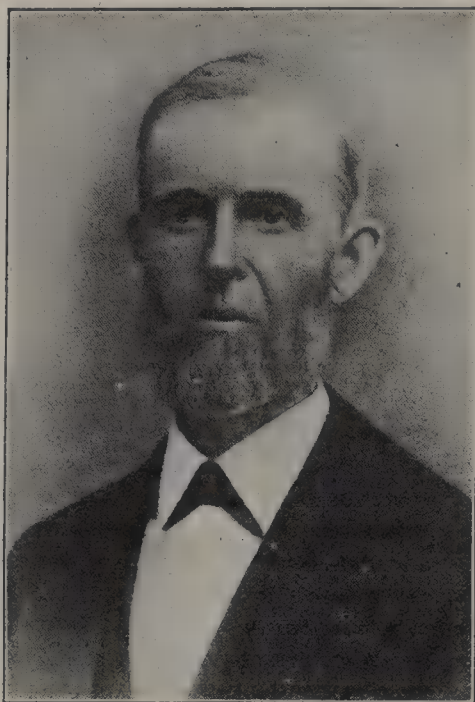
His education was chiefly obtained in the common school. He was a farmer and gardener of high rank at Dearborn, Mich.

He held minor town offices; was a member of the legislature in 1851. Professor of practical agriculture at Michigan Agricultural College, 1875-76; superintendent of farm and gardens, January, 1876—November, 1877.

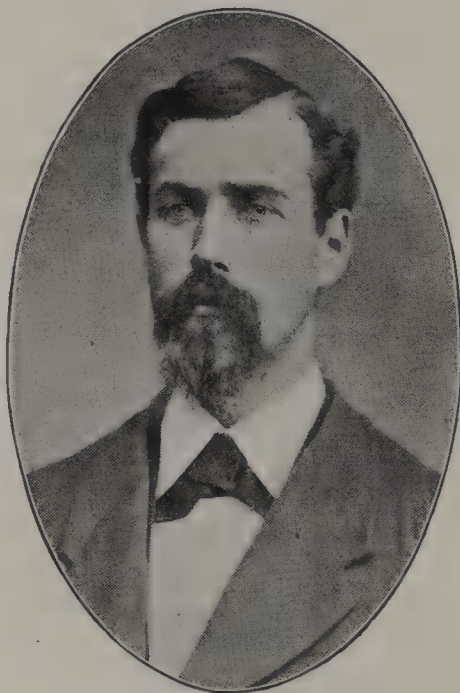
He was a genial gentleman and very thorough in whatever he undertook. He died at Dearborn, Michigan, March 15, 1891.

Children: Alfred Gurdon, '68; Frank Arthur, '80; Richard Herbert, '78; Orrin Preston, '79; Sarah M., Ribert E., three deceased while young.

CHARLES LEE INGERSOLL, M. S. To those of us who knew him he needs no word of commendation nor of reference to the perfect character denoted by the term "Christian gentleman."



ALFRED BUCK GULLEY.



CHARLES LEE INGERSOLL.

Of the graduates from M. A. C. who have taken high position as educators in the field of agricultural science none stood above him.

At the age of 18 he enlisted from Commerce, Oakland County, as private in the 9th Michigan Cavalry, March 7, 1863, and was mustered out July 21, 1865. His regiment took part in the battles of Burnside's advance in eastern Tennessee, leading up to the Gettysburg campaign, and it was a part of General Sherman's army in its march towards the sea.

At the close of the war Mr. Ingersoll married and was farmer and teacher for a few years, when he then entered M. A. C. in 1872 and graduated with the class of 1874, being considered one of the best scholars in that class. Immediately on graduation he was appointed foreman of the farm, under Professor Gulley, whom he succeeded as professor of agriculture and superintendent of the farm, a year later.

In 1879 he accepted a similar position at increased salary at Purdue University, Indiana, and from there went to Colorado in 1881 as director of the experiment station, professor of agriculture, and for a time was also president of that college.

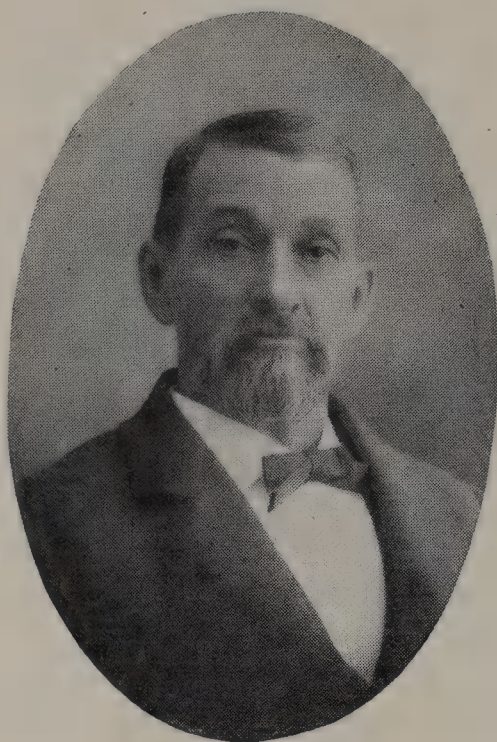
In 1890 he was called to Nebraska State University at Lincoln, as dean of the Industrial College and director of the Experiment Station.

In his report for 1879, President Abbot says: "Besides his instruction in the classroom, and his care of the farm, he has been active in promoting the good of the College in many ways. The Christian Union always found him a ready and valuable worker, as one of its officers, and as teacher or superintendent in its Sunday school. To his knowledge and enthusiasm the College cadets owe, more than to any other one, their efficiency in drill and in target practice. He was the captain of the company. Professor Ingersoll was a valuable officer in every department of his labors."

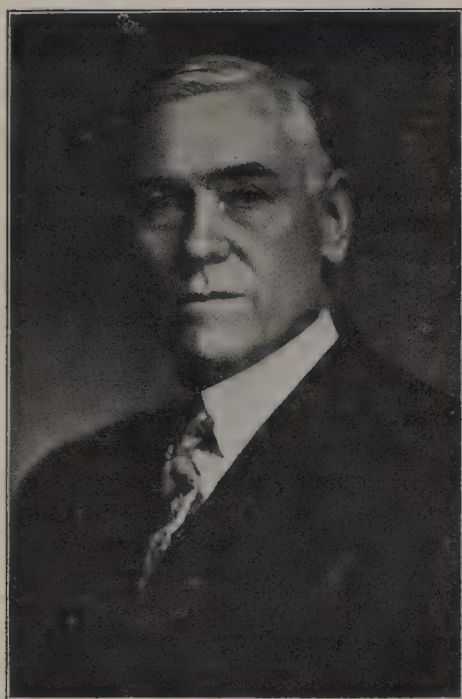
He died at Grand Junction, Colorado, at the home of his brother, December 8, 1895, after a lingering illness caused by creeping paralysis. He left a wife and one daughter.

ROLLA CLINTON CARPENTER, M. S., C. E., M. M. E., LL. D. was born at Orion, Michigan, June 26, 1852; son of Charles K. and Jennette (Coryell) Carpenter. He graduated from Michigan Agricultural College 1907 with the degree of B. S.; married Marion Dewey of Greenville, Michigan, 1876; instructor and professor of mathematics and civil engineering, Michigan Agricultural College, 1875-90; associate professor of engineering at Cornell University, 1890-1905; professor of experimental engineering, since 1895. Consulting engineer for Helderburg, Cayuga Lake, Quaker Portland, Great Northern, Belleville Portland and California Portland Cement Companies, etc. He constructed numerous power stations for electric railways and has had active charge of many engineering constructions; patent expert in several important cases. Judge of machinery and transportation, Chicago Exposition, 1893 and Buffalo Exposition, 1901. Member of the American Society of Mechanical Engineers (v. p. 1908-11), American Society of Mining Engineers, Engineers' Club (New York), American Society of Heating and Ventilating Engineers (president in 1898), American Society of Automobile Engineers (member of Council), American Society of Refrigerating Engineers.

Author: *Experimental Engineering* (6 editions), 1890, 1902; *Heating and Ventilating* (5 editions), 1891, 1902; *The Gas Engine* (with Professor Diedrichs); numerous papers in trans., etc.



SAMUEL JOHNSON



ROLLA CLINTON CARPENTER



ELIAS JOHN MacEWAN.

Dr. Carpenter is an Episcopalian; usually a Republican.

Children: Naomi, George, Charles. Address: Ithaca, New York.

(The above is mostly copied from "*Who's Who in America.*")

SAMUEL JOHNSON, M. S., son of Squire Johnson, of New Jersey, and Adelia (Hotchkiss) Johnson, of Canaan, Connecticut, was born at Springfield, Otsego County, New York, July 7, 1839.

He married, (1) September 1864, Eliza A. Clark, of Phelps, New York. She died April, 1874. (2) June, 1876, Sarah B. Hall, of Dowagiac, Michigan.

He was educated in the common school and at Cazenovia Seminary, New York.

He is a member of the Methodist Episcopal Church and in politics a Republican.

He engaged in teaching and farming at Warren, New York, and Dowagiac, Michigan; was professor of practical agriculture of the Michigan Agricultural College, December, 1879-August, 1889; agriculturist in the experiment station, February, 1885-89.

He was a township officer, 1864-1870; county superintendent of schools, 1871-1874; representative in the state legislature, 1877-1880; secretary of the State Agricultural Society, 1891; president of the Farmers' Mutual Fire Insurance Company, of Cass County, 1900-1912.

Children: Alice A., '84; Clara, Henry H., Philip S., Emily E.

Address: Dowagiac, Michigan.

ELIAS JOHN MACEWAN, A. M., son of Donald MacEwan, of Scotland, and Harriet (Thatcher) MacEwan, of Cuylerville, New York, was born June 25, 1851 in Lowell, Michigan. He married (1) Esca Babcock, of Galesburg, Michigan, September, 1868; (2) Ada Little, of Manhattan, Kansas. He was educated in the public school at Lowell, Michigan; Grand Rapids high school; State Normal; Kalamazoo College, with A. B., in 1875; A. M. in 1877; 1875-78, principal of Kalamazoo high school; 1878-80, principal Colby Academy, New Hampshire; 1880-1890, professor of English literature and modern languages at Michigan Agricultural College; in 1886-87, fellow at Johns Hopkins University; 1891-92, student in Berlin University.

1892-02 professor of English and German, Utah State College; 1892 professor of English literature, Kalamazoo College.

He is a Baptist and a Republican Mugwump.

Children: (By second wife.) Ada Marie, Charlotte, Donald, Dongred.

He is the author of *Technique of the Drama*; *Essentials of Argumentation*; *Essentials of English Sentence*.

The *Speculum*, September, 1889, says:

"In losing Professor MacEwan the College loses a man whose place cannot be filled. The very memory of the action will stand as a ghastly and forbidding landmark of injustice which will be an effectual bar to the best interest and prospects of the College in the future.

Because of Professor Pattengill's pointed and truthful editorial in the *Moderator*, the Board absurdly found him obnoxious to the College, since offensive to them. We have lost, by the deposition of Professor Pattengill, one of the most efficient and popular instructors that ever conducted a class in this College. The hearty good-will existing between him and the students is shown by the resolutions of his class to him and his reply."

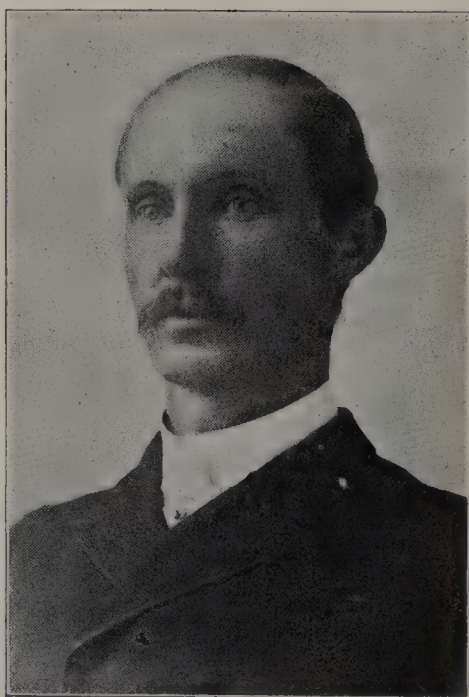
Two good Professors were lost to the College, MacEwan and Pattengill,



ALEXANDER JAMES MURRAY.



GEORGE HATFIELD HARROWER



JAMES SATTERLEE.

on account of something said concerning the act of a member of the State Board of Agriculture.

President Willets once said, "If you were to rake the whole state over with a fine-tooth comb, you couldn't get a better man to turn loose among our freshmen than that man Pattengill."

ALEXANDER JAMES MURRAY, V. S., was born in Edinburgh, Scotland, February 13, 1836. His father's name was John, born in the county of Caithness, Scotland; his mother's maiden name was Janet Sutherland who was born in the same county. He married Elizabeth Owens, a native of Ireland. Mr. Murray attended three elementary schools, a high school, school of arts for three years, and the University of Edinburgh. He is a Presbyterian and in this country a Republican. He studied with reference to practicing law, but in 1859 he began veterinary in a school in Edinburgh, remaining there three years where Dr. John Gamgee was the principal, graduating in 1862; was soon demonstrator of anatomy at the same College; gave a course of lectures at the Royal Agricultural College, England; attended clinics under Professor Henry Bouley at Alfort Veterinary School near Paris; 1865-66 veterinary inspector of the cattle plague in Britain and two other regions; 1866 came to Detroit, Mich. and began practice. Soon after he became the city veterinary inspector and inspected horses for the street railway, until 1896, when electricity superseded horses; in 1880 Governor Croswell appointed three cattle commissioners who selected Dr. Murray to act in cases of Texas Fever then appearing in Wayne county, serving also two years under Governor Jerome. While in Detroit he went to the Agricultural College beginning 1881, delivered for two years courses of lectures on veterinary, summer terms of 1881 and 1882. In 1887 he wrote a book for the Breeder's Gazette and was veterinary editor of that magazine; 1898 cattle inspector for the Bureau of Animal Industry at San Diego, California.

Owing to ill health in 1904 he went to El Paso, Texas where he practices his profession.

Children: Jessie, James, Emma, Rudolph S., E. S., Gregory, Maud, Bertha, John.

GEORGE HATFIELD HARROWER, A. B., was born at Sand Lake, New York, January 18, 1855. His father was Peter B. Harrower, living near Albany, New York, his mother was May (Simonds) Harrower, of Burlington, Vermont.

He married in Buffalo, Sarah E. Bryant, of North Tonawanda, New York.

Mr. Harrower, graduated from the University of Michigan in 1878, with the degree of A. B., studied at Berlin, 1885-86; at Halle, Germany, 1886-87, where he received the degrees of M. A. and Ph. D.

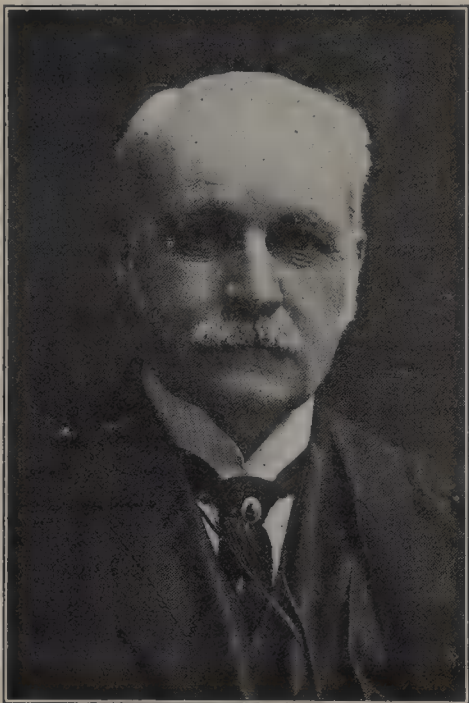
In religion a Christian, in politics Independent. He taught the classics in the high school in Grand Rapids, 1878; 1881-83, instructor in history and political economy, at M. A. C.; 1883-85, professor of the same; 1887, assistant professor of Latin, University of Michigan. Contractor in architectural iron and steel, Buffalo, New York. He was a genial and efficient teacher, well prepared for his work. Many of his friends were surprised when he quit teaching.

Children: None. Residence: 410 Delaware Avenue, Buffalo, New York.

JAMES SATTERLEE, M. S., son of Henry Satterlee, of Corinth, New York, and Harriet (Fay) Satterlee, of Livingston county, New York, was born



LIBERTY HYDE BAILEY



EDWARD A. A. GRANGE.



JOHN ALEXANDER LOCKWOOD.

near Greenville, Michigan, March 4, 1847; married Ella L. Crossman of Lansing, Michigan, on December 29, 1870.

His education was acquired in the district school and in schools at Greenville; in 1869 he graduated at M. A. C., with the degree of B. S.; 1874, M. S.

He is an Independent Republican and a member of the Baptist Church. From 1869-82 he was farming near Greenville, Michigan; 1883-84, professor of horticulture; 1885-89; clerk in the office of Michigan State Board of Health; 1889-90, clerk in the office of New York State Agricultural Society; 1890-1904, on his farm near Greenville; 1904, part of the time on his farm near Ann Arbor and part of the time on the road for D. M. Ferry & Company; 1910, treasurer of the State Horticultural Society.

They had one child, John C., soon deceased. Address: (in 1911) 306 Ottawa Street, Lansing, Michigan.

EDWARD ALEXANDER ANDREW GRANGE, V. S., M. S., was the son of George John Grange, of Ireland, and Mary (Dawson) Grange, of England. He was born in England; married Bessie Webster at Guelph, Ontario, about 1893. He graduated from Ontario Veterinary College, Toronto, Canada, in 1885, with the degree of V. S.; from Michigan Agricultural College in 1908, with the honorary degree of M. Sc.; lecturer for a time in Ontario Agricultural College; professor of veterinary science at M. A. C., 1883-1897; state veterinarian, 1885-97; veterinarian in the Experiment Station, 1888-92; dean of the veterinary department of the Detroit Medical College, 1897-99; veterinarian for Park, Davis Company, Detroit, 1899; lecturer on the promotion of Comfort and Care of Animals for the American Society of Prevention of Cruelty to Animals, 1899; principal of Ontario Veterinary College, beginning about 1908. He was a very capable man as lecturer at M. A. C. and efficient as the state veterinarian.

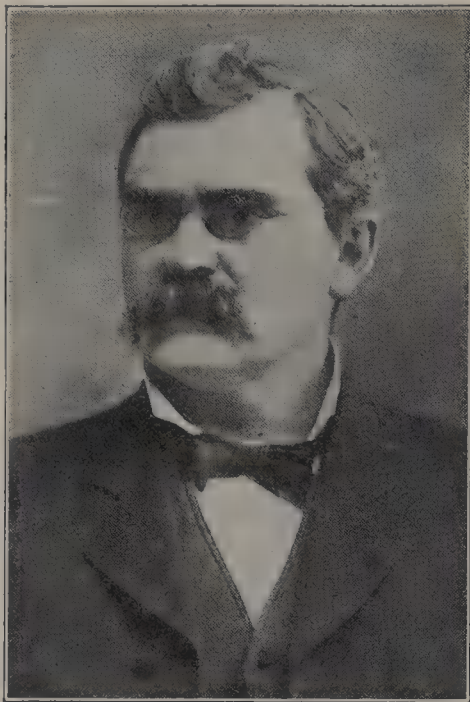
Children: three, one deceased; the names not furnished. Address: Toronto, Ontario, Canada.

JOHN ALEXANDER LOCKWOOD, M. S., son of Surgeon J. A. Lockwood of U. S. Navy, Dover, Delaware, and Julia (McLane) Lockwood, of Wilmington, Delaware, was born in Dresden, Saxony, October 31, 1856. Not married.

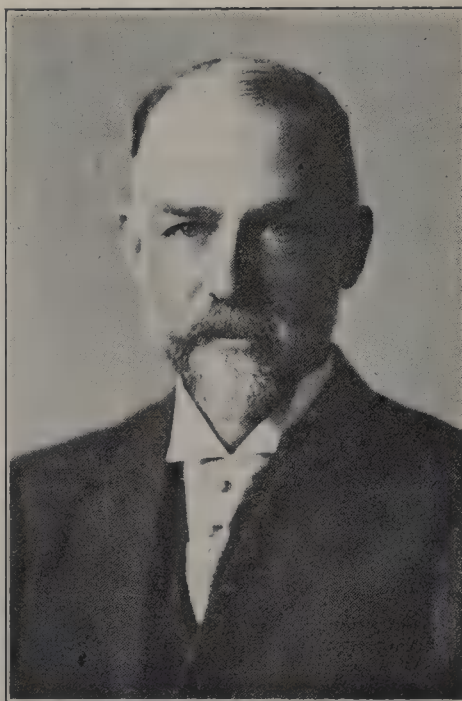
Educated on U. S. Scholarship at Chase, and at U. S. Infantry and Cavalry School; 1887, honorary M. S. from Michigan Agricultural College; served in U. S. Army as lieutenant and captain; served on staffs of governor of Louisiana and governor of California; while 2nd lieutenant, 17th Infantry U. S. Army, professor of military science and tactics, 1884-87. Mr. Lockwood was the first officer assigned to Michigan Agricultural College by the U. S. Government. In 1911, probably sooner, he was retired.

Address: Care of War Department, Washington, D. C.

LIBERTY HYDE BAILEY, M. S., was born in South Haven, Michigan, March 15, 1858. He was the son of Liberty Hyde Bailey and Sarah (Harrison) Bailey; reared on a farm; B. S., Michigan Agricultural College, 1882; M. S., 1886. He married Annette Smith, of Lansing, Michigan, June 6, 1883. Has given particular attention to botany and horticultural subjects, and to economics of agriculture, agricultural education, and general rural questions; assistant to Asa Gray, Harvard, 1882-83; professor of horticulture and landscape gardening, Michigan Agricultural College, 1885-88; professor of horticulture in Cornell, 1888-1903; director of the college of agriculture since 1903, Cornell University. Awarded Veitchian medal, 1898; chairman



LEWIS McLOUTH.



WILLIAM FREDERICK DURAND.

of the Roosevelt Commission of Country Life; fellow American Academy of Arts and Sciences; member American Philosophical Society; member of the Society of Plant Morphology and Physiology; member of the Society of Horticultural Science; member of the Society for the Promotion of Agricultural Science.

Author: *Survival of the Unlike*; *Evolution of our Native Fruits*; *Lessons with Plants*; *Botany, an Elementary Text for Schools*; *Beginners' Botany*; *Principles of Fruit-Growing*; *Principles of Vegetable Gardening*; *Plant Breeding*; *Garden-Making*; *Horticulturists' Rule Book*; *Principles of Agriculture*; *Nursery Book*; *Forcing Book*; *Pruning Book*; *Practical Garden Book*; *The Nature Study Idea*; *Outlook to Nature*; *The Training of Farmers*; *Manual of Gardening*; *The State and the Farmer*.

Editor: *Cyclopedia of American Horticulture*, 4 vols.; *Rural Science series*; *Garden-craft series*; *Rural Text Book series*; *Cyclopedia of Agriculture*, 4 vols. Contributor to technical journals and popular magazines.

1907, LL. D. from Wisconsin University. Brought up a Congregationalist. Democrat by preference. Children: Sara Mary, Ethel, Xoe.

Address: Ithaca, New York.

(The above is chiefly copied from *Who's Who in America*.)

LEWIS McLOUTH, A. M., Ph. D., son of Farley McLouth, of Cheshire, Massachusetts, and Mary (Doty) McLouth, of Windom, New York, was born September 21, 1835, near Rochester, New York. He married, 1859, Sarah A. Doty, of Ann Arbor, Michigan.

He was a student at Oberlin College, Ohio, and later graduated in the University of Michigan in 1858, with the degree of A. B.; 1860, A. M., M. Pd., State Normal School; Ph. D., Hillsdale College, Michigan. In religion he was Methodist Episcopal; in politics an Independent Democrat; member of the Zeta Psi Fraternity. In succession he was principal of an academy at Lapeer, Michigan; an Academy at Ontonagon, Michigan; Principal of the High School at Monroe, Michigan; superintendent of schools, of Monroe County and of Battle Creek, Michigan; professor of physical sciences in Michigan State Normal for fifteen years; president of the State Teachers' Association; professor of mechanics in Michigan Agricultural College, 1885-86; president of the South Dakota Agricultural College and director of the Experiment Station. In 1902 he lived at Longmeadow, Massachusetts and served as dean of the faculty of the Home Correspondence School.

Dr. McLouth was a man of commanding figure and striking personality—one with whom it was a pleasure to meet and converse. It is doubtful if any teacher was ever more beloved by his pupils or more successful in impressing the stamp of character upon them. In 1908 he was called back to the South Dakota Agricultural College to preach the baccalaureate sermon and had the pleasure of attending the 50th reunion of his class at the University of Michigan.

He died, March 15, 1909, at New Britain, Connecticut.

Children: Frances, Mary, Lawrence A., Sarah, Bessie C., Farley, Lewis C., Ida B., Benjamin F.

WILLIAM FREDERICK DURAND, Ph. D., was the son of William Leavenworth Durand and Ruth (Coe) Durand; he was born at Beacon Falls, Connecticut, March 5, 1859; graduated from U. S. Naval Academy, 1880; Ph. D. from Lafayette College, 1888.

Congregationalist and Insurgent Republican; married Charlotte Kneen, of Derby, Connecticut, November 23, 1883.

Mechanical engineer; served in Engineering Corps, U. S. Navy, 1880-07; professor of mechanical engineering, Agricultural College, Michigan, 1887-91; professor of marine engineering, Cornell University, 1891-1904; professor of mechanical engineering, Leland Stanford, Jr. University, since 1904, fellow A. A. A. S.; member of American Society of Mechanical Engineers; American Society of Naval Architects and Marine Engineers; Franklin Institute; Societe Technique Maritime; life member and gold medalist of American Society of Naval Engineers.

Author: Resistance and Propulsion of Ships, 1898; Fundamental Principles of Mechanics, 1899; Practical Marine Engineering, 1901; contributions to Engineering Journals.

Child: William Leavenworth, Address: Stanford University, California.

WENDELL LEE SIMPSON, son of Emory H. Simpson, of Carlton, New York, and Mary A. (Thompson) Simpson, of Leroy, New York, was born at Carlton, New York. He married Marion O. Wood, Piqua, Ohio, October 19, 1886.

He was educated in the public school, Hartford, Van Buren county, Michigan; Michigan Agricultural College, Lansing, 1878-79; U. S. Military Academy, West Point, New York,—graduating June 15, 1884.

Not a member of any church organization; in Government Service and never took active part in politics; 2nd lieutenant, U. S. Army, June 15, 1884 to April 20, 1891; 1st lieutenant, U. S. Army, April 20, 1891 to September 17, 1898; captain, U. S. Army, September 17, 1898 to March 7, 1907; appointed major, U. S. Army, March 7, 1907; in cavalry service, 3rd U. S. Cavalry from June 15, 1884 to January 4, 1887; in the quartermaster's department by detail from March 9, 1905 to March 7, 1907; in infantry service, except as above stated; professor of military science & tactics, Michigan Agricultural College, 1887-91; professor of mathematics and civil engineering, Michigan Agricultural College, from August 1890 to April 1891; participated in the Cuban campaign as acting Adjutant General, 3rd Brigade, 1st Division, 5th Army Corps; participated in the Philippine Insurrection, 1899-1900. In 1911 was on special detail, purchasing and shipping supplies to the Isthmus of Panama, necessitated by canal construction, 1908, with main office since at 24 State street, New York City. He resided in at least 24 places. He died April 23, 1913.

Children: Bethel Wood; cadet, U. S. Military Academy; graduated in class of 1911 with commission of 2nd lieutenant, U. S. Army; Dorothy Wood; Marian Wood, died October, 1900.

Address: 24 State Street, New York City.

LEVI RAWSON TAFT, M. S., was the son of Austin Augustus Taft of Mendon, Massachusetts, and Helen Maria (Mather) Taft, of Canton, Connecticut. He was born at Mendon, Massachusetts, August 22, 1859.

He married Ella S. Maynard of Northboro, Massachusetts, at Northboro, in 1884. Mr Taft was educated in the high school at Mendon; graduated in 1882, with the degree of B. S. from Massachusetts Agricultural College; assistant Professor of Horticulture in Massachusetts Agricultural College, 1882-85; took post-graduate study in zoology and horticulture in the University of Missouri, 1885-88.



WENDELL LEE SIMPSON.



LEVI RAWSON TAFT.

He is a Unitarian and a Republican. Professor of horticulture, Missouri University, 1885-88; professor of horticulture and landscape gardening, Michigan Agricultural College, 1888-1902; superintendent of farmers' institutes and state inspector of nurseries and orchards, 1902—still serving (1913); horticulturist of the Michigan Experiment Station, 1888-1904; president of Eveline Fruit and Land Company of Northwestern Michigan, 1910. In his present work he has brought the management of farmers' institutes to a high state of perfection.

Children: Grace Helen, '04, (Mrs. Edward J. Kunze); Lillian Maynard, '05; Howard Austin, '11; Hazel Charlotte, '10 (Mrs. Edward C. Lindemann); Harry Goodell, '12; Ethel. Address: East Lansing, Mich.



EDWARD PLAYFAIR ANDERSON.

EDWARD PLAYFAIR ANDERSON, A. M., Ph. D., was born at Milford, New Hampshire, August 29, 1856. His father's name was Edward Coffin Anderson, of East Point, Prince Edward Island, Canada; his mother's name was Helen (Best) Anderson, of Halifax, Nova Scotia.

Hattie Amelia Baker was born at Romeo, Michigan; educated at Salem and at McMinville College, both in Oregon.

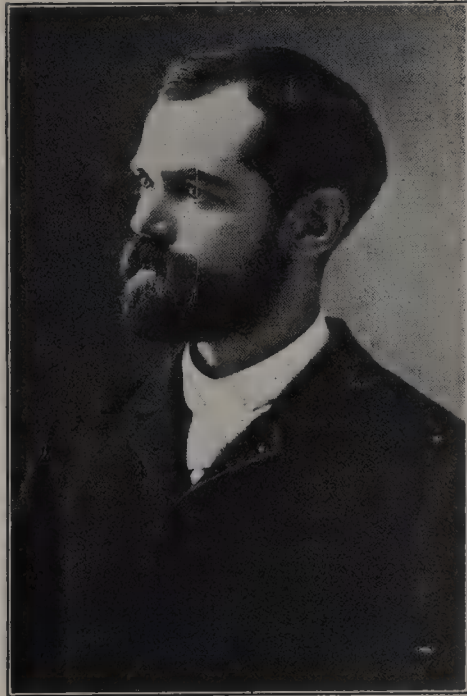
They were married at Salem, Oregon, June 12, 1884.

Mr. Anderson was educated in the high school, Portland, Oregon; Horton Academy, Wolfville, Nova Scotia; Highland Academy of Petersham, Massachusetts; University of Michigan, A. B. and A. M. in 1879; Ph. D., 1886; graduate course at University of Chicago, 1896-97, Stanford University, 1899-1900.

Religion, formerly Baptist, latterly Agnostic, in politics Independent. Two years professor of mathematics in State Normal School, Mississippi.

traveled and studied in France, 1880; student in Medical School of University of Michigan, 1881-82; 1884-86, teaching Latin, French, German in McMinville College, where his father was president; 1886-87 teacher in Michigan Military Academy; translating French, high school, Flint, Michigan; professor of English and history, Ohio University, Athens, Ohio; professor of English literature and modern language, August 1889 to August 1890, at M. A. C.; later taught in Miami University, Ohio; Washburn School, California; Stanford University; Portland high school, Oregon, and in other places.

Children: Frank Victor; Ethel Elizabeth; Edward Baker; Helen Best; Margaret Playfair; Dorothea; Arthur Baker. Address: 5024 34th Avenue, S. E., Portland, Oregon.



EUGENE DAVENPORT.

EUGENE DAVENPORT, M. S., son of George Martin Davenport, of Ithaca, New York, and Esther (Sutton) Davenport, of Monroe, Michigan, was born June 20, 1856, at Woodland, Michigan.

He married Emma Jane Coats, of Coats' Grove, Michigan, November, 1881. He graduated at Michigan Agricultural College in 1878, with the degree of B. S.; M. A. in 1884; M. Agr., 1895; LL. D. in 1907. He is a Congregationalist and a Republican. He was farming, 1878-88; studying and assistant in botany in the Experiment Station for two terms, 1888-89; professor of agriculture, 1890-91; president of Escola Agricola, Piracicaba, Sao Paulo, Brazil, S. A., 1891-92; farming, 1892-95.

Dean of the College of Agriculture and director of the Agricultural Experiment Station in the University of Illinois, 1895-to date; secretary of the section in education, A. A. A. S. and E. S., and secretary of the section in agriculture and chemistry, 1899; member Society for the Promotion of

Agricultural Science (President 1911-12). Fellow A. A. A. S.; member London Authors' Club; N. E. A., A. A. P. P. S.; Ill. Acad. Sci.; National Geographic Society; A. Es. As:

Author: Principles of Breeding; Education for Efficiency; Domestication of Animals and Plants. Children: Dorothy, Margaret.

Address: Urbana, Illinois.

HOWARD EDWARDS, M. A., LL. D., was the son of Francis Marion Edwards and Frances Lawson (Bland) Edwards of Virginia. He was born in Fauquier county, Virginia, November 7, 1854. He graduated from Randolph-Macon College, Virginia, 1876, with the degree of M. A.; student in the University of Leipzig, 1877-78; the Sorbonne, Paris, 1891-92; received the



HOWARD EDWARDS.

degree of LL. D., from the University of Arkansas in 1891; married Mildred Elizabeth Smith January 5, 1881. He was associate principal of Bethel Military Academy, 1878-80; teacher in Bingham School in North Carolina, 1880-82; principal of Bethel Academy, 1882-84; professor of English and modern languages in the University of Arkansas, 1885-90; the same position in Michigan Agricultural College, 1890-1906; president of Rhode Island State College since July 1, 1906. He is a member of the Kingston Congregational Church; in politics an Independent. In Michigan he was highly esteemed for his work as a teacher and for his good influence among the students.

Children: Norman, deceased, Bland, Mildred. Address: Kingston, Rhode Island.

JOHN JORDAN CRITTENDON was the son of Eugene W. Crittendon of Frankfort, Kentucky, and Laura (Bacon) Crittendon, of the same town. He was born in Frankfort, Kentucky. He married Rose F. Mitchel, of Port

Huron, Michigan on July 31, 1882. Educated in high school and military post at Leavenworth, Kansas. He is an Episcopalian.. He was a soldier, in the middle west, northwest and southwestern part of the United States, in Cuba and the Philippine Islands; 1876, he was made 2nd Lieutenant; 1882, 1st lieutenant; 1894, captain; 1901, Major; 1905, lieutenant colonel; 1907, retired from the army on thirty years service.

Children: John J.; Frank Rice; William Mitchell; Eugene W.

Address: 1235 Water Street, Port Huron, Michigan.

LESTER PAIGE BRECKENRIDGE was the son of Moses Paige Breckenridge and Lucretia L. (Wetherell) Breckenridge, both born at Ware, Massachusetts.



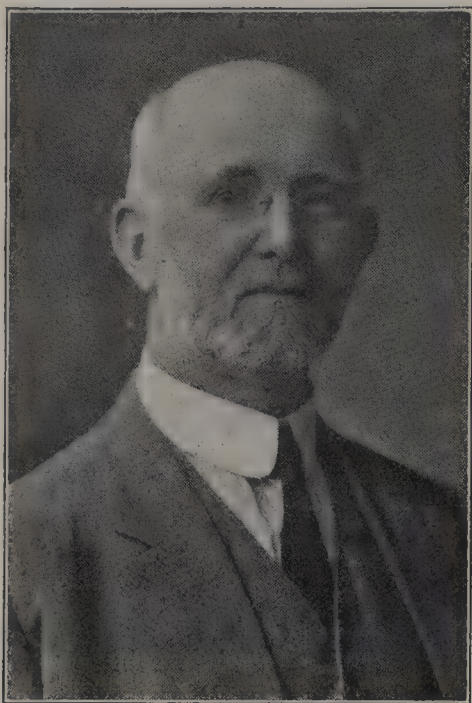
JOHN JORDON CRITTENDON.

He was born at Meriden, Connecticut, May 17, 1858. He married, for his second wife, Susan Wilson Ford. Mr. Breckenridge was educated in the Sheffield School of Yale University, receiving the degree of Ph. B. in 1881, M. A. in 1909; Illinois University granted D. Eng. in 1910. In religion, he is a Baptist, in politics, a Republican. He was a teacher in Lehigh University, 1882-1890; professor of mechanical engineering in Michigan Agricultural College, August, 1891-August, 1893; professor of mechanical engineering in Illinois University, 1893-1909; a similar position in Yale University, 1909-to date still serving (December, 1912.)

As teacher and director of the laboratory at M. A. C. he was a pronounced success from every point of view.

Children by first wife: Blanche F., Gladys S., May H.

Address: 412 Humphrey street, New Haven Connecticut.



LESTER PAIGE BRECKENRIDGE.



HERMAN KLOCK VEDDER.

HERMAN KLOCK VEDDER, C. E., son of Herman M. Vedder, of St. Johnsville, New York, and Kate (Klock) Vedder, of the same place, was born October 7, 1866, at St. Johnsville, New York; married September 4, 1889, at Ithaca, New York, Kate Humphrey Dodd. Until 1882 he acquired a common school education; attended a school year, 1882-83, at Clinton Liberal Institute, Fort Plain, New York; fall of 1883 with a scholarship won by examination, entered Cornell University, graduating with the degree of C. E. He is a member of a Congregational Church; Independent Republican.

In 1887, draftsman with the Groton Bridge & Manufacturing Company; fall of 1887 was offered a scholarship and, studying structural engineering, was soon appointed instructor in civil engineering and remained till 1891. In vacation surveyed for Ithaca Water Works Company; selling agent for Groton Bridge & Manufacturing Company; inspector of bridges; hydraulic expert in a lawsuit. Professor of mathematics and civil engineering at Michigan Agricultural College, September 15, 1891, to July 7, 1909; since then professor of civil engineering; during his service at M. A. C. he constructed a sewer system, directed numerous surveys, constructed bridges, designed systems of plumbing; for outside parties inspecting and building bridges, plotted city subdivisions, investigated the water power of streams; engineering for electric and steam railroads; planned railroad for Lansing manufactures; state examiner of plots 1907 to 1910.

Member of the Society for Promotion of Engineering Education, 1894- to date (1913); member and past President of Michigan Engineering Society. He was once school moderator and later president of the school board of East Lansing. Children: Norma Dodd, Katherine H. Address: East Lansing, Michigan.

PETER MERRICK HARWOOD, B. S., served as professor of agriculture from February, 1892 to August, 1893, coming from Ravenna, Ohio, where he had charge of an excellent dairy farm. In 1885 Professor Harwood was married to Miss Mary A. Wallace.

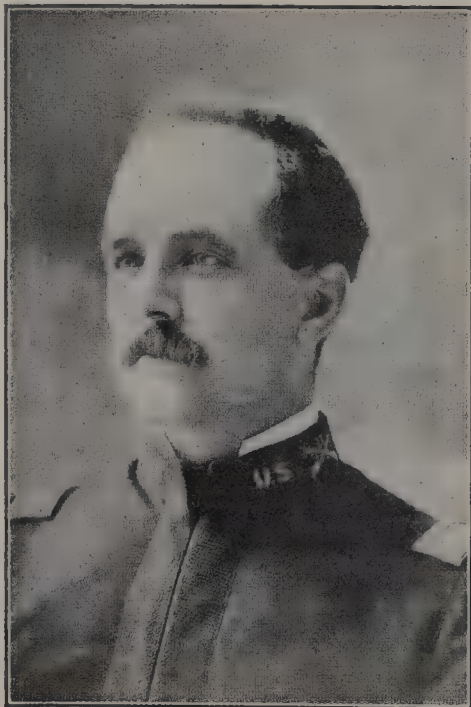
He was born in Barre, Massachusetts, in 1853 and traces his ancestry in direct line to John Harwood, 1630. His boyhood was spent on the home farm, attending the country school, then the high school, and later he graduated, in 1875, from Massachusetts Agricultural College. His father died in 1876 and he then took the old homestead and became a breeder of fine Holstein-Friesian cattle.

He was chosen Lecturer of Barre Grange in 1877, '80, '81 and '82. He was master of the same Grange in '83, '84 and '85. In 1886 and '87 he was lecturer of the Massachusetts State Grange. In 1889 he was chosen a member of the executive committee of the Massachusetts State Grange, and overseer in 1890 and '91. In 1887-99, he was president of Barre Central Cheese Company; a member of the Massachusetts Board of Agriculture from 1889 to 1891, during a part of this time he was a member of the Board of Control of the Massachusetts Experiment Station, and of the Examining Committee of the college. He was much in demand for work in Farmers' Institutes, lecturing widely over the state.

Children: Eunice, Mary and Alice. Address: 136 State House, Boston, Massachusetts.



PETER MERRICK HARWOOD.

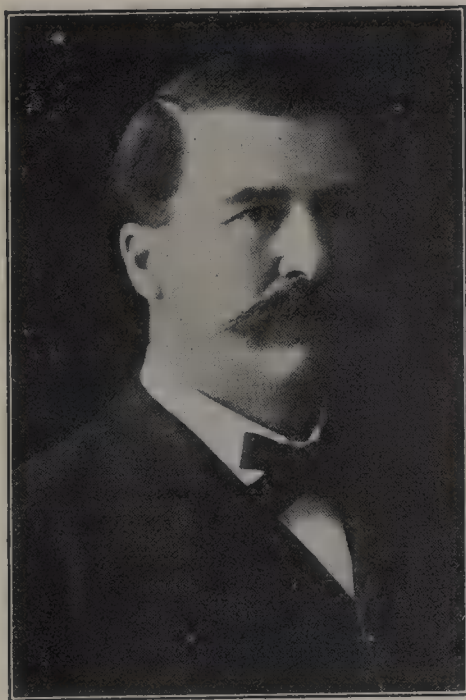


EDSON ARTHUR LEWIS.

EDSON ARTHUR LEWIS was the son of John R. Lewis of Oxford, Canada, and Amanda (Moore) Lewis, of the same place. He was born February 1, 1864, at Otterville, Ontario, Canada. He married Mary Ward, who was born, educated and married in Baltimore, Maryland. He graduated from the U. S. Military Academy in 1887. In religion Iconoclastic, in politics neutral. He was a popular and efficient teacher of military science and tactics at M. A. C. He served in the Philippines, 1900-12, with the rank of major, 1892-96.

Children: Mary, Dorothy, Warfield, Elizabeth.

Address: U. S. Army, Washington, D. C.



CLINTON DE WITT SMITH.

Clinton De Witt Smith, M. S., was born at Trumansburg, New York, March 7, 1854, son of Reuben Smith and Clarissa G. (Pease) Smith; graduated at Cornell University, 1873; practiced law, 1888-90; assistant agriculturist, Cornell University, 1890; director of Experiment Station, Arkansas; director of Experiment Station and professor of dairy-husbandry, University of Minnesota, 1891-93.

He was elected and served as professor of practical agriculture and superintendent of the farm and agriculturist of the Experiment Station, September, 1893 to June, 1900; director of the Experiment Station and dean of special courses, 1900-08. While connected with Michigan Agricultural College he was the means of starting the work in dairying by erecting the first building for the purpose and conducting experiments and teaching this subject. No man ever connected with the College gave so many acceptable lectures among the farmers. He rendered valuable assistance and advice in growing sugar-beets. He awakened much interest in the students. After graduating at Cornell, Professor Smith and his brother came into

possession of the home farm and during seven years paid off a mortgage of \$12,000.00 in which dairying was the leading business.

He married Anna Cora Smith of Trumansburg, June 16, 1892. He is a member of the Society for the Promotion of Agricultural Science. In 1908 he resigned to become president of Escola Agricola, Piracicaba, Sao Paulo, Brazil, where he presided for four years.

In September, 1896, C. J. Strand, editor of the *Sunfield Sentinel*, said of him:

"Professor Smith was reared on a farm and knows what he is talking about, from the ground up.

"Professor Smith is a rattling good orator.

"Professor Clinton D. Smith believes with the Grange motto that the farmer is greater than his farm and should be first cultivated.



CHARLES LEWIS WEIL.

"One of the best speakers in Michigan has been secured, in the person of Professor Clinton D. Smith, of Michigan Agricultural College.

"The band struck up and the multitude repaired to the grove to hear the speech. It was the 257th time Professor Smith had addressed gatherings of farmers and it was easy to understand his popularity from the start. His physique was commanding, his voice clear and resonant, his expression genial. From his opening remarks one might have imagined him a prominent divine.

In style the speaker was very pointed and at times very epigrammatical, abounding in humorous anecdote. His discourse won him a thousand friends."

Children: none; he returned from Brazil in the summer of 1913 and resumed his residence at the farm home, Trumansburg, New York.

CHARLES LEWIS WEIL, S. B., son of Lewis Weil and Anna Moore (Tuttle) Weil, both of Massachusetts. The father was born in Germany, the mother in North Andover, Massachusetts. Charles Lewis was born in North Andover, Massachusetts, in 1866; graduate of Johnson High School, 1881; Massachusetts Institute of Technology in 1888, with the degree of S. B.; shopwork and draughting, 1891-93; instructor at Lehigh University, 1891-93; professor of mechanical engineering and director of the mechanical department, at M. A. C., 1893-1906. During the latter period, he designed and superintended the construction of the power-, the lighting- and the heating-plant, made preliminary plans for the engineering building; maintained an engineering office in Detroit, 1906-10; consulting engineer in manufacture of salt, 1910; autumn of 1910 became an officer in the Diamond Crystal Salt Company, St. Clair, Michigan; since the summer of 1911 he



WALTER BRADFORD BARROWS.

had been a director and has devoted his entire time to this salt company.

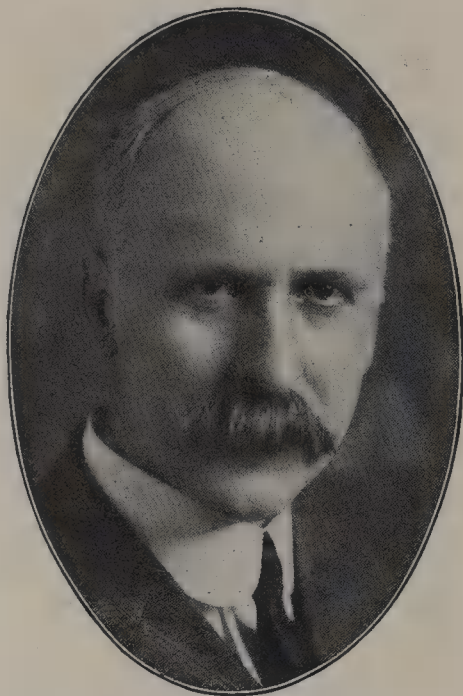
He is an Episcopalian and a Republican; a Mason, honorary member of Tau Beta Pi fraternity. He married Ella Shevile Bass, of Brooklyn, New York at Bethlehem, Pennsylvania, August 30, 1893.

Children: Henel B., Elizabeth Prince. Address: St. Clair, Michigan.

WALTER BRADFORD BARROWS is the son of William Barrows, of Massachusetts, and Elizabeth Adams (Cate) Barrows, of New Hampshire. On June 29, 1882, he married at Rochester, New York, Elizabeth Withall.

He graduated at Reading High School, Massachusetts, in 1872; Massachusetts Institute of Technology, 1876, with the degree of B. S.; 1876-79;

assistant in Ward's Natural Science Establishment, Rochester, New York; 1879-81. Instructor in chemistry and physics, Colegio Nacional, Concepcion del Uruguay, Argentine Republic, S. A.; 1881-82, science teacher, Normal School, Westfield, Mass.; 1882-1886, instructor in biology, Wesleyan University, Middletown, Connecticut; 1884-86, instructor in botany, Trinity College, Hartford, Connecticut; 1886-94, first assistant ornithologist, U. S. Department of Agriculture; 1891-92, lecturer in economic ornithology, Maryland Agricultural College; 1894—professor of zoology and physiology and curator of the general museum, Michigan Agricultural College; 1897-98 entomologist, Michigan Agricultural College Experiment Station; fellow of the A. A. A. S.; fellow of the Ornithological Union; fellow of the Association of Economic Entomologists; member of Michigan Academy of Science (Secretary 1896-01; President 1905). He has given special attention to the



FRANK STEWART KEDZIE.

migration and economic relations of birds; interrelation of birds and insects; bird population of Michigan, and prepared for the College: Michigan Bird Life, noticed under publications. He is an orthodox Congregationalist and a Republican. Children: William Morton, class of '03; Marguerite, class of '04. Address: East Lansing, Michigan.

FRANK STEWART KEDZIE was born in Vermontville, Michigan in 1857. He was the son of Dr. Robert Clark Kedzie of New York State and Eliza (Fairchild) Kedzie of Ohio, both graduates of Oberlin College.

He graduated from the Agricultural College with the degree of B. S. in 1877; D. S., 1912.

He married Kate Marvin at Lansing, Michigan, December 30, 1885. She was the daughter of Mathew Marvin and Mary (Gregory) M. of Lansing. Mr. Marvin was from New York state and his wife from Virginia.

Mrs. Kedzie has been an accomplished teacher of music for many years.

Frank came to the college in 1863 when a mere lad about six years old and has lived there and in Lansing for fifty years (1913). In 1880 he began teaching chemistry at M. A. C. and has served as instructor, assistant professor, adjunct professor, and professor, for a portion of the time assistant chemist of the Experiment Station. He has been active, efficient, progressive and popular.

Children: None.

MISS EDITH F. McDERMOTT was the first person chosen to serve as head of the department of home economics, beginning in September, 1896, and continuing till June, 1898. Edith Florence McDermott's father was born in Nova Scotia and her mother in Montreal and later lived in Pennsyl-



MISS EDITH F. McDERMOTT.

vania. She taught in the State College of Washington. She was a native of Meadville, Pennsylvania; received her literary training in the high school of that city, and in Allegheny College. She then entered Drexel Institute Philadelphia, and later Cornell University and took up the work along the lines of domestic economy and household science. After completing this work and graduating with honors, she took charge of the cooking and domestic science department of a large industrial school. Her work in this position was of a very high order and brought her to the notice of many prominent educators. She is a woman of thorough training; has more than an ordinary amount of tact and general good sense.

HARRY WILL BANDHOLTZ was the son of Christopher J. Bandholtz of Germany and Elizabeth Bandholtz of New York and was born December

18th, 1864 at Constantine, Michigan. He married May Cleveland at Chicago, Illinois, July 15, 1890. He was educated in a high school; Michigan Military Academy, at Orchard Lake; U. S. Military Academy at West Point, New York, graduating June, 1890; professor of military science and tactics, September, 1896-99. In succession he was 2nd lieutenant, 1st lieutenant, captain, major, colonel and assistant chief of the Philippines Constabulary, commanding southern Luzon; brigadier-general and chief P. Constabulary; August 13, 1907, commander in chief of the Veteran Army of the Philippines; in 1909 chief of staff of the United Spanish War Veterans in the United States; served in numerous campaigns in the Philippines and Cuba.

Child: Cleveland Hill. Address: Manila, P. I. or U. S. Army.



HARRY WILL BANDHOLTZ.

GEORGE ALFRED WATERMAN, B. S., M. D. C., was the son of John B. Waterman, of England, and Eleanor (Pomeroy) Waterman, of Northampton, Massachusetts. He was born December 15, 1867, at Salem, Michigan; married Marilla H. Murray, of Salem, Michigan, on June 30, 1874.

He graduated from M. A. C. in 1891, with degree of Bachelor of Science; from the Chicago Veterinary College, 1893, with the degree of Doctor of Comparative Medicine.

In 1912 he reports his religion and politics as both in the air. In 1892 he reports as farming; 1893-97, professor of veterinary science at M. A. C.; from 1907-13 to date, farming southeast of Ann Arbor. Although a very successful teacher, he seemed to dislike the work and set his heart on retiring to a farm. Without any deceit whatever, the Board and Faculty were sorry to have him leave.

He was a very useful man and undertook at times to look after Mili-



GEORGE ALFRED WATERMAN.



MAUDE RYLAND KELLER.

tary Drill; very helpful to students in their work in Y. M. C. A. Children: none. Address: Ann Arbor, Michigan.

MAUDE RYLAND KELLER, A. M., was born at Selinsgrove, Pennsylvania, where her father William S. was born. Her mother's maiden name was Martha Jane Ryland; Maude Ryland graduated at Wellesley College in 1892 with the degree of A. B.; in 1896 with the degree of A. M.; student at Columbia University, 1901-1902; teacher of English literature in Bradford Academy; dean of the women's division at Michigan Agricultural College 1898-1901; teacher of English literature in Mount Vernon Seminary, Washington, D. C.; teacher of English literature in Miss Wheeler's School, pro-



HERBERT WINDSOR MUMFORD.

vidence, Rhode Island; assistant principal and teacher of English literature in Westover, Middlebury, Connecticut.

Home address: Wellesley, Massachusetts.

HERBERT WINDSOR MUMFORD, B. S., born at Moscow, Michigan, February 26, 1871, son of E. C. L. Mumford and Julia A. (Camburn) Mumford: graduated from Hanover (Michigan) high school, June, 1887; student at Albion College, two years; graduated from M. A. C., with degree of B. S., 1891. Investigated live stock conditions in Great Britain, France, Belgium and Holland, 1897; Argentine Republic, 1908; married at Lansing, Michigan, July 5, 1909, Lena Crosby. He was instructor at M. A. C. and assistant agriculturist of the Experiment Station, 1895-96; assistant professor of agriculture and animal husbandry, and Investigator, 1896-99; Professor of Agriculture, 1899-01; secretary of the Farm Home Reading Circle, 1895-99; professor of animal husbandry and chief in animal husbandry agricultural Experiment Station, University of Illinois, since 1901.

Author and Publisher: Beef Production; joint author, Practical Farming and Gardening and numerous bulletins of Michigan and Illinois Experiment Stations; Fattening Lambs; Production and Marketing of Wool. Market Classes and Grades of Cattle. Feeds Supplementary to Corn for Fattening Steers; Fattening Steers of the Various Market Grades; Comparison of Methods of Preparing Corn and Clover Hay for Fattening Steers; Maintenance Rations for Beef Breeding Cows; The Short Feeding of Cattle; Live Stock Situation in Illinois. Contributor to Cyclopedia Americana and Cyclopedia of American Agriculture and to various agricultural journals.

He is an expert in breeding, feeding and judging live stock; was chairman of Cattle Jurors at St. Louis World's Fair. Member of Alpha Zeta and Sigma Xi



CHARLES ALEXANDER VERNOU.

fraternities; American Breeders' Association; Society for the Promotion of Agricultural Science; American Society of Animal Nutrition; American Economic Association; National Geographic Society; Illinois Academy of Science; American Farm Management Association; American Short-horn Breeders' Association; American and National Shropshire Breeders' Associations; American and National Duroc-Jersey Breeders' Association; American Collie Breeders' Association; University of Illinois Senate; Champaign County Country Club; University Club; Methodist; Republican.

Children: Dwight Curtis, Mary Caroline, James Satterlee, Herbert Windsor, Virginia. Address: Urbana, Illinois.

CHARLES ALEXANDER VERNOU, U. S. A. Major in the United States army, was chosen professor of military science and tactics, September 25, 1900, and retired, 1903. Little of his family history has been secured, A son graduated at West Point; he was twice married; living with his

second wife, in Lansing, while professor at the College. He became 2nd lieutenant in a cavalry regiment, April 2, 1862; mustered out as captain, August, 1865; served during the civil war, in the cavalry corps of the Potomac; on March 7, 1867, he entered the fourth U. S. Regiment as 2nd lieutenant; on January, 1868, he became 1st lieutenant; in June, 1873, he was transferred to the 19th U. S. Infantry and became captain in December, 1886; in March, 1899, he was promoted to major of the 17th Infantry and in June of that year, after over thirty years of service, was retired at his own request. Up to 1890 he served in the plains west of the Mississippi River; in the war with Spain he served at Mobile, Chickamauga, and in Porto Rico. Physically he was rather large; he was popular and efficient.



MAUDE GILCHRIST.

MAUDE GILCHRIST, A. M., was the daughter of James Cleland Gilchrist of Allegheny, Pennsylvania and Hannah (Cramer) Gilchrist of Hubbard, Ohio, born at California, Pennsylvania.

In 1880, she received the degree of B. Pd. from Iowa State Normal School (now Teacher's College); 1887, B. S.; 1880-83 she was a student at Wellesley College, Massachusetts; 1897-1901, dean at Illinois Women's College, Jacksonville, Illinois; 1895, student in Summer Marine Biological Laboratory, Wood's Hole; 1894-95 attended lectures at Harvard University; 1896-97 student at University of Göttingen; 1907, student at University of Michigan, with degree of A. M.; 1901-1913 dean of home economics, Michigan Agricultural College. Member of Congregational Church.

Address: Wellesley, Massachusetts.

She is a remarkable student, a teacher of great ability, was an efficient manager of women at this college, a most trying position. She resigned to become professor of botany at Wellesley College.

CHARLES EDWARD MARSHALL, Ph. D., son of Lavinias Marshall of Carlisle, New York, and Lurena (Crandall) Marshall, of the state of New York, was born October 6, 1866, at Port Clinton, Ohio.

His education was acquired at the State Normal School, Fredonia, New York, graduating in the classical course, 1889; principal of Ellicottville Union School, New York, for nearly two years; 1891, entered the medical work of the University of Michigan, graduating in 1895, Ph. B.; 1902, Ph. D.; 1898, a student in Jorgensen's Laboratory, Copenhagen; 1903, student at Pasteur Institute, Paris, and Berlin; 1903-06, assistant in bacteriology in hygienic laboratory, University of Michigan; 1896-1902, assistant in Osterlag's Laboratory, bacteriology, Michigan Agricultural College; 1902-1912, professor of bacteriology and hygiene; in 1908, vice-scientific director



CHARLES EDWARD MARSHALL.

of Michigan Experiment Station; 1906-08, treasurer, later director of School District No. 7; 1908, president of board of education, East Lansing, Michigan.

July 7, 1896, he married Maud Alice Skidmore, Fredonia, New York. She is an excellent musician and was for a time teacher of music at Michigan Agricultural College. Children: Max Skidmore, Don, Maud Alice.

In 1912, he resigned to engage in similar work at Massachusetts Agricultural College and to become dean of the Post Graduate School.

Address: Amherst, Massachusetts.

ULYSSES PRENTISS HEDRICK, M. S., Ph. D., son of Benjamin Franklin Hedrick, of Virginia, and Mary (Meyers) Hedrick, of Elkhart, Indiana, was born January 15, 1870, at Cedar Rapids, Iowa. He married Amy Willis (Plummer) of Corvallis, Oregon, June, 1898; graduated at Michigan Agricultural College in 1893, with the degree of B. S.; 1895, M. S.

He is an Episcopalian and a Democrat.

From 1893-95, assistant in horticulture, Michigan Agricultural College; 1895-97, professor of horticulture and botany, Oregon Agricultural College, Corvallis, Oregon; 1897-99, professor of horticulture and botany, Utah Agricultural College, Logan, Utah; 1899-1902, assistant professor of horticulture, Michigan Agricultural College; 1902-05, professor of horticulture, giving great satisfaction, at Michigan Agricultural College; 1905 to date, horticulturist, New York Agricultural Experiment Station, Geneva, New York. His position is that of horticulturist, but he gives all his time to pomology. Much of his time is given up to the preparation of a series of fruit books. He occasionally prepares bulletins such as 275, 278, 298, 299, 314; member of the Society of Horticultural Science; American Pomological Society; Society for the Promotion of Agricultural Science.



ULYSSES PRENTISS HEDRICK.

He is author of *The Grapes of New York*; *The Plums of New York*—similar in all respects in the make-up, to the work on grapes. The work on grapes, finely illustrated, received from competent botanists and horticulturists, the highest commendation. The bulletins are of a high grade.

Children: Catherine Layton, Penelope Rodney, Ulysses Prentiss, Jr.
Address: Geneva, New York.

ROBERT SIDNEY SHAW, B. S. A., son of Professor Thomas Shaw who was born at Niagara, Canada, and Mary Janet (Sidney) Shaw, born at Woodburn, Canada, R. S. S., was born at Woodburn, Ontario, Canada, July 24, 1871.

In January, 1901, he married May Travis, who was born in New Jersey; she graduated at the University of North Dakota, and became a school

teacher—a good one. Mr. Shaw graduated from a high school at Guelph, Ontario, and from the Ontario Agricultural College at Guelph, in 1893, with the degree of B. S. A. He is a Presbyterian, seldom votes a straight ticket in politics. After graduation he managed the home farm in Canada from 1893-1898; then was professor of agriculture in Montana Agricultural College until September 1, 1902, when he became professor of agriculture in Michigan Agricultural College, a position he still holds (1913). On August 6, 1908, was added also the title, dean of agriculture; in 1909 was added the position of director of the Experiment Station.

Children: Robert L., Thomas Travis, deceased, and Sarah May.

Address: East Lansing.



ROBERT SIDNEY SHAW.

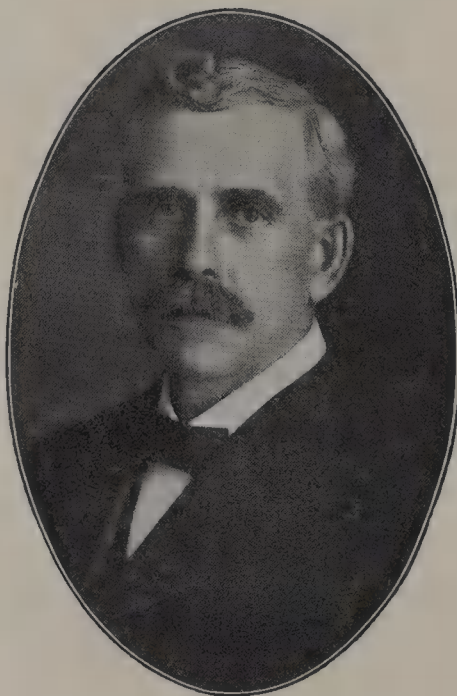
CHESTER LELAND BREWER, B. S., is the son of Laselle C. Brewer, a farmer of New York State, and Nellie M. (Graves) Brewer, of Rutland, Wisconsin. He was born in Owosso, Michigan, November 26, 1875. In 1899, November 13, he married Grace Brownell. In 1897 he graduated from the University of Wisconsin with the degree of B. S.; in 1908 attended the Summer School of Harvard University. He is a Baptist and usually a Republican. In 1897-98 he was professor of physical education of Whitewater State Normal; 1899-1903, professor of physical education, Albion College, Michigan; September 1, 1903-10, professor of physical culture and director of athletics, Michigan Agricultural College; 1910, professor in the University of Missouri.

Professor Brewer was remarkably successful and popular with the students as director of athletics; as professor of physical culture of all the students, he was hampered by not having a gymnasium.

Children: Eleanor M., Frances F. Address: Columbia, Missouri.



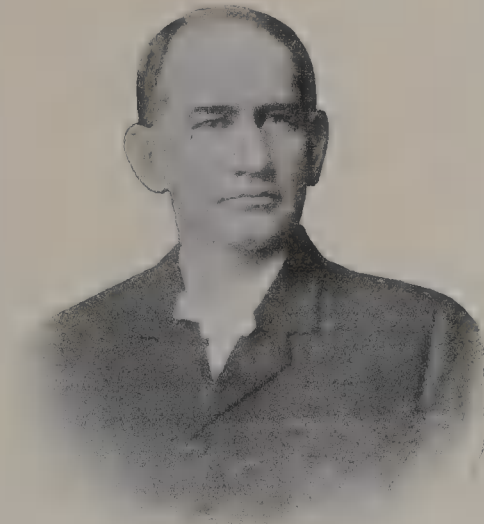
CHESTER LELAND BREWER.



JOSEPH ALEXANDER JEFFERY.

JOSEPH ALEXANDER JEFFERY, B. S. Agr., son of John Jeffery, of Cornwall, England, and Mary (Davis) J., of the same place, was born, September 17, 1859, at Cornwall, Lebanon County, Pennsylvania.

He married Lucy A. Smith, June 30, 1887, at Plattsville, Wisconsin, who died January 14, 1911. He is a Methodist Episcopal and in politics usually a Republican. He attended the State Normal School, at Plattsville, Wisconsin, in 1886; graduated at the University of Wisconsin in 1896, with the degree of A. B., taking some graduate work later. He was principal of the high school at Cadett, Wisconsin, 1886-88 inclusive; principal of the high school at Shell Lake, Wisconsin, 1887-92; assistant professor of agriculture at the Agricultural College, North Dakota, 1896-97; assistant professor of soil physics, at the University of Wisconsin, 1897-99; assistant professor of agriculture and professor of agronomy, and later full professor of soils



ERNEST EVERETT BOGUE.

and soil physics at Michigan Agricultural College, 1899, until September, 1913. He has for several years been superintendent of a large Sunday School. In 1913, he resigned to accept a position in a railway company in Northern Michigan where he is to study farming and teach farmers along the line.

Children: Alice E., Raymond L.

ERNEST EVERETT BOGUE, M. S., A. M., was born January 12, 1864, in East Orwell, Ohio. He was of French Huguenot stock on his father's side. There were nine children in the family, six of whom, with the mother, are still living. Mr. Bogue's early ambition was to gain a higher education and to this end he constantly worked, earning most of the money with which to defray his expenses at school and college. He taught one term of district school; spent three years at New Lyme Institute, Ohio, where he graduated in 1888, with the degree of B. S.; in the fall of 1889 he entered Ohio State University, from which he graduated in 1894, with the degree of Bachelor of Science in Horticulture and Forestry, and in June, 1896, he received

from the same University the degree of Master of Science in Entomology and Botany.

He loved trees, plants and music, and the home surroundings, associations and education in the University all tended in the same direction.

He married on March 25, 1896, Miss Myra Viola Wilcox, of Columbus, Ohio, and went immediately to Oklahoma as head of the department of botany and entomology at the State Agricultural College, resigning in July, 1901, after teaching four years, to take post graduate work at Harvard University, from which institution he received the degree of Master of Arts in June, 1902. From September of that year to August 19, 1907, he occupied the new chair of forestry in Michigan Agricultural College, where his skill, originality, ingenuity and genial ways soon attracted a large class of students. He took great interest in the subject of forestry throughout the state, visiting many of the leading farmers to encourage and help them in plans for the correct management of their wood lots, and in starting original plantations. A map of the state hung in his office, well dotted with red spots showing the localities of these early efforts by farmers of Michigan.

He started a forest nursery, a part of the plan of which was to furnish young trees at cost for the farmers to plant. For the beautiful home erected, he selected a congenial spot near the papaw bushes, sloping to the bank of the Red Cedar, where the dam below made a delightful place for rowing for over a mile in extent. Pitcher plants, orchids and numerous wild plants of his selection occupied suitable spots between the house and the river. With excellent judgment, he selected a nice variety of trees to plant about his new home, among them a fine grove of Norway spruces, with the view of furnishing Christmas trees to the neighborhood when they should attain suitable size. The chief charm of the location, as he rightly viewed it, was just across the river on the farm, a virgin forest of maples, beeches, basswoods, elms and others delighting in such surroundings. He was secretary of the State Academy of Science, 1906-07.

He was a man of deep religious convictions; but his creed was formulated in acts of Christian living rather than in words of belief. He was long the superintendent of the Sunday School near the College.

After a protracted illness, he died, August 19, 1907, as we might say, in the midst of a promising career of usefulness, as a man, a citizen and a Teacher.

There were no children.

WILLIAM S. HOLDSWORTH, M. S., was the son of William S. Holdsworth, a cabinet maker and bookkeeper, and Mary (Saunders) Holdsworth. He was born in London, England, February 28, 1856. He married Miss Adelaide Smith, a school teacher from Massachusetts. At an early age he came with his parents to the shores of Grand Traverse Bay, Michigan. His fondness for this beautiful, invigorating region never waned; here he built his summer home and while resting, he gratified his artistic taste with brush and palette.

He was graduated from the College with the class of '78, supplementing his work with a course in art at Boston, Massachusetts. In 1881 he began teaching at M. A. C.; from 1883 to 1887 he was designer and draftsman for Bond & Chandler, Chicago, Illinois. From there he returned to this College to take charge of the department of drawing, first as instructor, then as assistant and then as full professor from 1904 to September, 1907.

For portions of several years he tried the climate of California, Florida and other places, with the view of regaining his health. He prepared the

excellent oil portrait of the late Franklin Wells, now in the College Library; the fine water-color painting of the house so long occupied by Dr. Beal, and painted many other choice sketches.

He died of tuberculosis September 18, 1907, at his home just north of the College Campus.

Professor V. T. Wilson, in his report for 1909, writes:

"There has been an element of sadness to me in the discharge of my duties this year, in the thought that I was called to carry on his work. I saw at once that I was taking up the work of a master hand and I cannot refrain here from expressing my appreciation of him as a teacher and organizer. If I can succeed in carrying out his plans as he would have done I feel that I shall be doing the best work for the College. The *esprit de corps* of the



WILLIAM S. HOLDSWORTH.



WILLIAM HUDSON KELL.

staff of instruction has been all that could be desired and also bears testimony to his efficiency."

Children: Robert, '11, Harry William, Richard.

WILLIAM HUDSON KELL, U. S. A., son of Colonel John Kell of Steubenville, Ohio and Maria (McCulluck) Kell of the same place, was born April 19, 1841, at Steubenville, Ohio. He was lieutenant colonel, U. S. Army; professor of military science and tactics, 1904-1905.

He married Emma St. L. Sise of Portsmouth, New Hampshire. He was educated at Harris Academy, Ohio; member of the Episcopal Church; served in the Army from 1861 to date (1911).

Children: None. Address: Post Office, Washington, D. C.

ARTHUR RODNEY SAWYER, A. B., E. E., is the son of David H. Sawyer, of Antrim, New Hampshire, and Ann (Wood) Sawyer. He was born August 26, 1868, at Bunker Hill, Illinois. On September 16, 1905, he married Cora Hill, of Bunker Hill, Illinois.

Mr. Sawyer was educated in a manual training school, St. Louis, Missouri; Washington University, St. Louis, through the junior year; attended Leland Stanford, Jr. University, receiving B. S. in 1893; attended the University of Wisconsin, receiving the degree of E. E. in 1896.

He is a Progressive Republican and a Congregationalist.

He was a teacher in the high school; draftsman with an electric company; with the Cutler Hammer Manufacturing Company, all three in Milwaukee; assistant professor of electrical engineering in the State College, Lexington,



ARTHUR RODNEY SAWYER.

Kentucky; in 1904 to date he has been professor of physics and electrical engineering in Michigan Agricultural College.

Child: Margaret Jessie. Address: East Lansing, Michigan.

FREDERICK WILLIAM FUGER, U. S. A., was the son of Frederick Fuger, of Germany and Margaret T. Fuger, of Glasgow, Scotland. He was born at Fort Slocum, New York, February 21, 1868. He married Marie N. Hall, of Detroit, Michigan.

He was educated in the high school of Newport, Rhode Island, and in the Massachusetts Institute of Technology, graduating in 1891, with the degree of B. S. He is a Roman Catholic and has no politics.

August 1, 1891, he became 2nd lieutenant, 13th Infantry; 1898, 1st lieutenant; 1901, captain. Has served in Oklahoma, Kansas, New York, Cuba, Philippine Islands, California, Michigan and Texas; professor of

military science and tactics in Michigan Agricultural College, 1905-09.

He was a man much respected and efficient while at M. A. C.

Children: Theoden H., Frederick W., Pierse G.

Address (1912): U. S. Army, Captain 13th Infantry, Manila, P. I.

STEVENSON WHITCOMB FLETCHER, M. S., Ph. D., was born at Littleton, Massachusetts, September 10, 1875; his father, Charles K. Fletcher was born at Littleton, Massachusetts; his mother, Anna (Holton) Fletcher was born at West Acton, Massachusetts; his wife, Margaret Rolston was born at Rome, Georgia; married June 27, 1905.

He attended the public schools of Worcester, and Littleton, Massachusetts; graduated from Massachusetts Agricultural College in 1896, with degree B. S.; Ph. D. degree from Cornell University, 1900. Congregationalist; Independent Democrat.

Assistant horticulturist at Massachusetts Agricultural College, 1896 to 1897; fellow in horticulture, Cornell University, 1897 to 1898; assistant in horticulture, Cornell, 1898 to 1900; professor of horticulture and horticulturist of the Experiment Station, Washington State College, 1900 to 1902. Similar position at West Virginia University, 1902 to 1903. Assistant professor of extension teaching in agriculture, Cornell University, 1903 to 1905; professor of horticulture at Michigan Agricultural College, 1905 to 1908; director of Virginia Agricultural Experiment Station, 1908. Member of the American Pomological Society; Society for Horticultural Science; Phi Kappa Phi (Massachusetts Agricultural College).

Author: How to Make a Fruit Garden, 1906; Soils—How to Handle and Improve Them, 1907.

Children: Robert, Richard, Stevenson, Jr. Address: Blacksburg, Virginia.

(The above is chiefly copied from "Who's Who in America.")

THOMAS CHARLES BLAISDELL, Ph. D., is the son of (Rev.) J. W. Blaisdell, of New Hampshire, and Harriet I. (Morse) Blaisdell, of Angelica, New York.

He was born in Oil City, Pennsylvania, August 29, 1867. He married Kate Christy, of Pittsburg, Pennsylvania, May 18, 1893.

He was educated at Allegheny College, Meadville, Pennsylvania; Syracuse University, New York, with the degree of A. B., in 1888; A. M., in 1891; 1896-97, student in the University of Nebraska, Lincoln, Nebraska; 1904, Ph. D. from the University of Pittsburg, Pennsylvania. Congregationalist; Independent Republican. He taught at Charlotte, North Carolina; Litchfield, Connecticut; Allegheny, Pennsylvania; Lincoln, Nebraska; taught nine years in the normal school, at Pittsburg, Pennsylvania; 1906, September 1, 1912, or later, professor of English literature and modern languages, Michigan Agricultural College.

He is co-author of Steps in English, books 1 and 2; Author of Steps in English; Composition-Rhetoric; and English in the Grades, all published by the American Book Company.

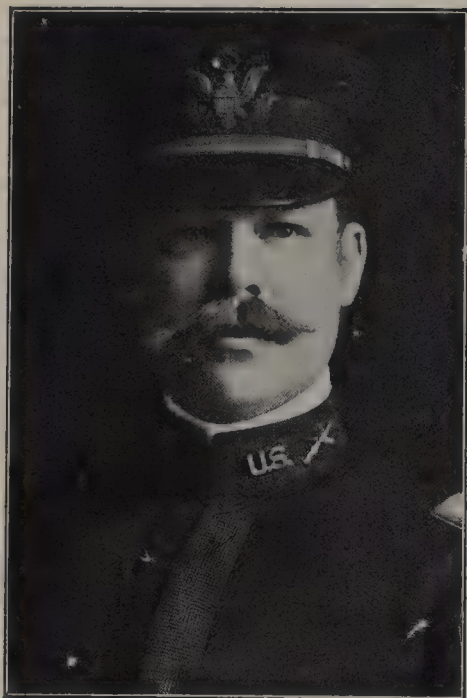
The following are extracts from letters received at the College:

"He is young, vigorous, scholarly, enthusiastic, winning in personality, successful in experience—he is the man for you, and I congratulate you if you secure him."

The president of Allegheny College states: "I know him and I know his work. Do not see how you could select a better man for the place."



STEVENSON WHITCOMB FLETCHER.



FREDERICK WILLIAM FUGER.



THOMAS CHARLES BLAISDELL.

Professor S. D. Fess, of Chicago, says: "I can, without reservation, commend him to your favorable consideration. Aside from his wide reputation as an author, his professional standing as a teacher, both from the standpoint of the class room and the rostrum where I have seen him at work, he is a most affable gentleman whose influence is wholesome. In short, I have observed no faults to him, and frankly confess he is the kind of a man one is pleased to recommend to his friends. My own opinion is that you cannot secure him. In case you can do so you will make no mistake."

There were others of the same trend. He has fulfilled the promises given in his recommendations.

For many years he has been a very successful lecturer at teachers' institutes in five or more different States.



WILLIAM OLIN HEDRICK.

He tells a story well; always looks on the bright side. In 1912 resigned to become president of Alma College.

Children: Mary, Thomas C., Jr., Donald Christy, William Morse.

Address: Alma, Michigan, 1915.

WILLIAM OLIN HEDRICK, M. S., Ph. D., son of Benjamin Hedrick, of Charlottesville, Virginia, and Mary (Meyers) Hedrick, of Elkhart, Indiana, was born April 3, 1868, at Elkhart, Indiana.

He graduated at high school, Harbor Springs, Michigan; graduate of Michigan Agricultural College, 1891, with the degree of B. S.; 1896, University of Michigan, M. S.; 1909, Ph. D.

He is a Democrat and a Congregationalist.

From August, 1891 to September, 1893, Instructor in English, Michigan Agricultural College; September, 1893, assistant professor of history and

political economy; June, 1906, professor of history and economics. His doctoral thesis, the "History of Railroad Taxation in Michigan" was published in 1912 in a volume of 70 pages by the Michigan State Library.

He takes much interest in the schools of East Lansing and for some years has been a member of the School Board. During the year 1897 he spent six months in Europe, studying at Göttingen, Germany, and travelling through England, France and the Low Countries.

On August 3, 1898, he married Lu B. Baker, daughter of Lieutenant Luther Byron Baker and Helen Davis Baker, Lansing, Michigan.

Children: Benjamin Prentice (deceased), Helen, Hester, Amy, Marion.
Address: East Lansing, Michigan.

RUFUS HIRAM PETTIT, B. S. in Agr., was born, January 11, 1869, at Baldwinsville, New York. He was the son of Captain Rufus D. Pettit and Elvira (McHuron) Pettit; May, 1895, married Jessie A. Treat, of Elmira, New York. In 1895 graduated at Cornell University, with the degree of B. S. Agr. In 1891 he went to Rochester, New York, to accept a position in the osteological and anatomical departments of Ward's Natural Science Establishment. While there he made a specialty of entomology and soon after graduating, 1895, he went to Minnesota as assistant state entomologist. In September, 1906, he became professor of entomology at the Michigan Agricultural College. During one summer (1892) he was an instructor in entomology at Arey's Natural Science Camp at Canandaigua, New York. While in Cornell he prepared a Bulletin (No. 97) on Entomogeneous Fungi or Insect Diseases which was published by the institution.

Children: Jessie A., Dorathy C.

Professor Pettit is an excellent photographer, apt at drawing and has produced a number of excellent bulletins on economic entomology. He is a popular and genial Teacher with hosts of friends.

GEORGE WELTON BISSELL, M. E., is the son of George Edwin Bissell, of New Preston, Connecticut, and Mary Elizabeth (Welton) Bissell, of Waterbury, Connecticut. He was born in Poughkeepsie, New York, July 14, 1866; married Fannie Hubbard Speed, of Ithaca, New York, June 25, 1889.

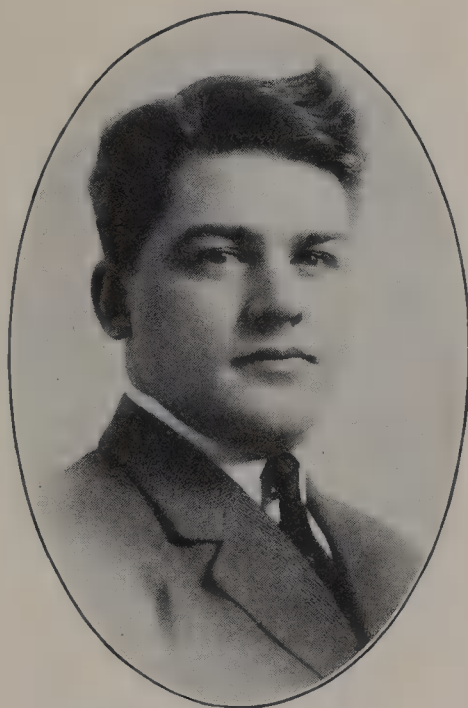
Educated in public schools of Poughkeepsie. Instructor in experimental engineering, Sibley College, Cornell University, 1888 to 1891. Assistant professor of mechanical engineering, Iowa State College 1891-92. Sons of the American Revolution.

He is an Episcopalian and a Republican.

Professor of mechanical engineering and dean of engineering, Michigan Agricultural College, since 1907. Fellow of A. A. A. S. (sec. sect. D.); member of Sigma Xi; member of American Society of Mechanical Engineers; member of Society for the Promotion of Engineering Education; American Society Testing Materials; member of the Michigan Engineering Society; member of the Detroit Engineering Society.

Children: none. Address: East Lansing, Michigan.

JAMES FRED BAKER, B. S., M. F., son of Major Joseph Stannard Baker and Alice (Potter) Baker, of St. Croix Falls, Wisconsin, was born at St. Croix Falls, Wisconsin, April 23, 1880.



JAMES FRED BAKER.



RUFUS HIRAM PETTIT



GEORGE WELTON BISSELL.

He graduated with the degree of B. S. from the Michigan Agricultural College in 1902; from the School of Forestry of Yale University, with the degree of Master of Forestry, in 1905.

He married Bessie Irene Buskirk, daughter of Hon. H. F. Buskirk, '78, at Wayland, Michigan, April 20, 1907. She graduated from Michigan Agricultural College, with the degree of B. S., in 1903.

After graduation in 1902, he entered the forest service of the United States; September, 1905, he was instructor in forestry in Pennsylvania State Forest Academy, Mt. Alto, Pennsylvania; September, 1906, assistant professor of forestry in Colorado College, Colorado Springs; October 1, 1907, professor of forestry in Michigan Agricultural College. See notice of his management in Michigan, under Forestry.

In religion he is a Presbyterian; in politics, a progressive Republican. Children: Louis Stannard Baker, Elizabeth.

Address: East Lansing, Michigan.

LESLIE M. HURT, D. V. M., son of James T. Hurt, of Kentucky, and Nancy (Adkins) Hurt, of Alabama, was born November 5, 1880, near Grinnell, Iowa. He married Effie M. McKim, at Ames, Iowa. He attended the common school; high school at Newton, Iowa; collegiate work in the State College, Ames, Iowa; four and one-half years in agriculture and veterinary science at that college, with the degree of D. V. M., in 1904.

He is not a member of any church and steers clear of politics.

In 1904 he served the government as veterinary inspector in the bureau of animal industry for four months, in the abattoirs of Kansas City and in field work in the Northwestern States, with headquarters at Lewiston, Idaho; accepted the position of assistant professor of physiology and sanitary science in the veterinary department of the Iowa State College; in the fall of 1907 elected veterinarian to the Experiment Station and professor of veterinary science in Michigan Agricultural College; February, 1910, became connected with the firm of W. B. Otto & Co., of Charlotte, Michigan, importers of draft horses; May, 1911, engaged in the practice of veterinary science, Lansing, Michigan. Now residing in California.

Children: One 5 years, and the other 3 years of age, a boy and a girl.

HARRY JOSHUA EUSTACE, B. S., son of Joshua Harvey Eustace of Rochester, New York, and Bell (Thompson) Eustace, of Lyons, New York, was born at Rochester, New York, April 24, 1877; married, October 19, 1907, to Eugertha E. Lawrence, Geneva, New York.

He attended the public schools in Rochester, New York; pursued a course in Michigan Agricultural College, graduating, with the degree of B. S., in 1901.

He is a Baptist and a Republican. July, 1901-September 1, 1906, assistant botanist of the New York Agricultural Experiment Station, Geneva, New York; September 1, 1906-August 15, 1908, experimenting in the storage and transportation of fruits for the United States Department of Agriculture; 1908, August 15, professor of horticulture in Michigan Agricultural College. He has made the work in horticulture practical and popular.

Children: none. Address: East Lansing, Michigan.

VICTOR TYSON WILSON, M. E., was born at Philadelphia, April 11, 1864; son of Joseph Wilson and Anna (Tyson) Wilson; graduate of School of Industrial Art, Philadelphia, 1885; M. E., Cornell University, 1902; married



LESLIE M. HURT.



HARRY JOSHUA EUSTACE.



VICTOR TYSON WILSON.

Harriet Pattison, of Ithaca, New York, June 25, 1902. In business, New York, 1887-93; teacher, Sibley College, Cornell University, 1893-1903; Drexel Institute, Philadelphia, 1903-04; assistant professor of general engineering drawing, University of Illinois, 1904-07; professor of engineering drawing, Pennsylvania State College, 1907-08; professor of drawing and design, Michigan Agricultural College, since September 1, 1908.

Author: Free-hand Perspective, 1899; Free-hand Lettering, 1902.

Joint Author: Notes on Practical Mechanical Drawing, 1907; Descriptive Geometry, 1909. Children: none. Address: East Lansing, Michigan.

(The above is copied from "Who's Who in America.")

WALTER HIRAM FRENCH, M. Pd., was the son of Harvey H. French of Cuba, New York, and Perlle A. (Niles) French of Great Valley, New York. He was born January 28, 1862, at Cuba, New York. June 24, 1886, married Caddie M. Chaffee, Allegan, Michigan. He took the classical and the scientific courses at the State Normal College, receiving the degree of M. Pd., and later completed a course in law. He is a Methodist and a Republican. From 1888-1893 he was superintendent of schools, Litchfield, Michigan; 1893-1900, county commissioner of schools Hillsdale county; 1901-1908, deputy state superintendent of public instruction; 1908, president of the State Teachers' Association; in 1908, July 1, professor of agricultural education, Michigan Agricultural College. He has been very successful in planning courses of study in twenty or more counties in which there is work in agriculture.

Children: Horace L. Address: East Lansing or Lansing, Michigan.

WARREN BABCOCK, B. S., son of Warren Babcock, of Scipio, New York, and Cordelia (Twist) Babcock, Scipio, New York, was born at Ypsilanti, Michigan, September 15, 1866; married Gertrude Hanson, of Milan, Michigan, November 16, 1892.

He graduated in 1890 at Michigan Agricultural College, with the degree of B. S.; special student during some vacations, 1893-98, at the University of Michigan. In politics a Democrat; Mayor of East Lansing, 1908-09.

Instructor in mathematics, 1891-92; assistant professor of mathematics, September, 1893-98; associate professor and secretary of the faculty, 1898-1909; professor of mathematics and secretary of the faculty, 1909-1913. For a good portion of two years he was ill and unable to perform much work. He died June 3, 1913. He was a thorough teacher; genial, even-tempered, a man with many friends.

Child: Gertrude M. Address: East Lansing, Michigan.

GEORGE MICHAEL HOLLEY, M. S., was born at Lawrenceville, Henry County, Alabama, April 13, 1876. He was the son of John Green Holley of Franklin County, Georgia, and Jane (Fonderin) Holley, of Henry County, Alabama.

He married Leila Dobbins, September 26, 1907, at Fort Gaines, Georgia. She was educated in the public school and in Brenan College, Georgia. Mr. Holley was educated in the public school and in the Polytechnic Institute of Auburn, Alabama, graduating with the degree of B. Sc., in 1897; M. Sc., in 1898. He has been in the U. S. Army since leaving College, entering volunteers, July 25, 1898, as a second class private, 3rd engineers. He is (1911) captain of the 11th U. S. Infantry. He was appointed pro-



WARREN BABCOCK.



WALTER HIRAM FRENCH.



GEORGE MICHAEL HOLLEY.

fessor of military science and tactics, September 1, 1909, and served till June, 1911.

Child: George Michael, Jr. Address: War Department, Washington, D. C.

VERNON MORELLE SHOESMITH, B. S., son of George B. Shoesmith and Louisa A. (Cummins) Shoesmith, was born, December 27, 1876, at Leslie, Michigan; married Elsie M. Morrison, December 23, 1903, at Milford, Michigan.

In 1895 graduated at high school, Leslie, Michigan; 1901, graduated at Michigan Agricultural College, with the degree of B. S. Like many others, Mr. Shoesmith and Miss Morrison, later both graduates of the Agricultural College, married after an acquaintance as students. Baptist and now Congregationalist; in politics Independent.

August, 1901, to January, 1907, assistant in agronomy, State Agricultural College, Kansas; 1907, January 1, to January 1, 1908, Agronomist, Maryland Agricultural College; 1908, January 1, to February 15, 1910, associate professor of agronomy, Ohio State University; 1910, February 15, professor of farm crops and doing work in the Experiment Station, Michigan Agricultural College. Author of several bulletins.

Children: Margaret, Dorothy, Helen. Address: East Lansing, Mich.

ANSON CROSBY ANDERSON, B. S., was the son of Edwin Anderson, of Ellington, New York, and Catherine (Crosby) Anderson, of Ellington, New York. He was born, August 19, 1865, at Ellington, New York.

He married Inez E. Shannon, of Leon, New York, June 28, 1894. She was educated at the New England Conservatory of Music, Boston, Massachusetts.

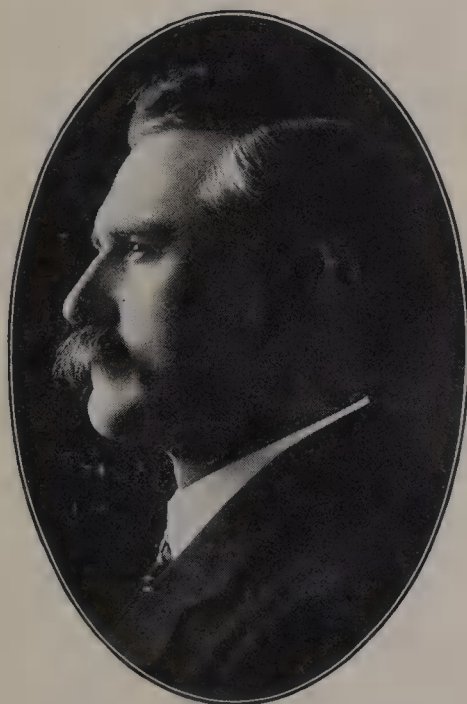
Mr. Anderson was educated at Ellington High School; Fredonia Normal School; took summer courses at Chautauqua and Cornell University and Harvard University; graduated at M. A. C., with the degree of B. S., in 1906. He is a Congregationalist and a Republican. He was superintendent of the schools at Smethport, Pennsylvania, 1890-91; principal of Forestville High School, New York, 1891-1904; instructor in animal husbandry, 1906-08; assistant professor of dairy husbandry, 1908-10; professor of dairy husbandry, 1910-. He is industrious, public spirited and efficient.

Children: Edgar S., Richard J. Address: East Lansing, Michigan.

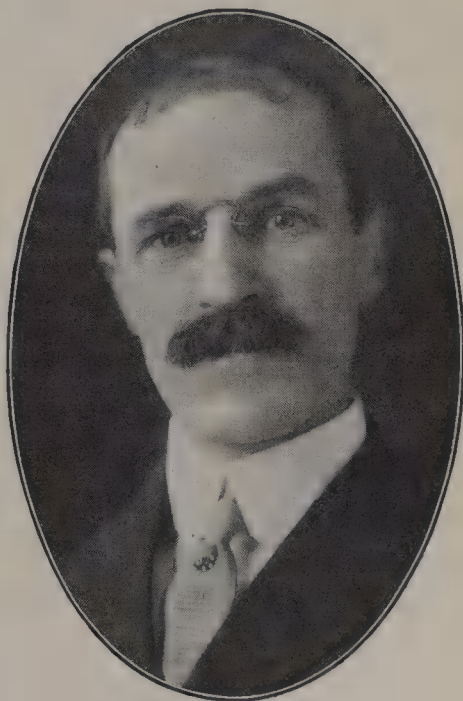
RICHARD POPE LYMAN, B. S., M. D. V., the son of Charles P. Lyman of Boston and Lucy Elery (Pope) Lyman, Somerville, Mass., was born at Concord, Massachusetts, August 5, 1872; married, February 16, 1898, Annie Downing Evans of Hartford, Connecticut. He attended the Boston Latin School, not graduating; graduated, in 1892, at the Massachusetts Agricultural College, receiving the degree of B. S.; in 1894, graduated, with the degree of Doctor of Veterinary Medicine, at Harvard University; in 1894, demonstrator in histology in the Harvard Medical School; became veterinary field agent for the Massachusetts Cattle Commission, serving, 1894 to July, 1895: 1895-1908 in general practice, Hartford, Connecticut, serving the state as veterinary advisor and Hartford County Milk Commission during the greater portion of that period; lecturer on infectious diseases of animals at the Kansas City Veterinary College, Kansas City, Mo., in the winters of 1907-08, 1908-09 and 1909-10, serving the college during the last year as professor



VERNON MORELLE SHOESMITH.



ANSON CROSBY ANDERSON.



RICHARD POPE LYMAN.

of clinical medicine and obstetrics. During his professional career, Dr. Lyman has served as president of the Connecticut State Board of Veterinary Registration; secretary and later president of the Connecticut Veterinary Medical Association; chairman for six years of the committee on publication of the American Veterinary Medical Association; five years as secretary and twice elected vice-president of the above association; he was one of five of a committee appointed by Secretary of Agriculture James Wilson to investigate veterinary education in the Colleges of America, serving the commission as its chairman 1908-1909; collaborating editor American Veterinary Review since 1907; active member of the American Veterinary Medical Association, National Geographic Society, Sons American Revolution, Michigan State Veterinary Medical Association and has honorary membership in sev-



ERNST ATHEARN BESSEY.

eral veterinary organizations. In 1910 he was appointed dean of the division of veterinary science at the Michigan Agricultural College.

An Episcopalian and independent in politics. Children: Bertha D., Richard P. Address: East Lansing, Michigan.

ERNST ATHEARN BESSEY, Ph. D., is the son of Charles E. Bessey '69, Michigan Agricultural College, of Milton, Ohio, and Lucy (Athearn) Bessey, West Tisbury, Massachusetts. He was born at Ames, Iowa, February 20, 1877; married Edith Carleton Higgins, Omaha, Nebraska. In 1896 he graduated from the University of Nebraska, with the degree of B. A.; 1897, B. Sc; 1898, M. A.; 1904, Ph. D., University of Halle, Germany. He is a Congregationalist and a Progressive. He was assistant pathologist of the division of vegetable physiology and pathology, U. S. Department of Agriculture, 1899-1901; in charge of the office of seed and plant introduction, U. S. Department of Agriculture, 1901-02; agricultural explorer for

the same office in Russia, Caucasus and Turkestan, in the summer of 1902; in Russia and Caucasus, summer of 1903 and in Algeria during the spring of 1904; pathologist of the bureau of plant industry, U. S. Department of Agriculture, 1904-08, being stationed at Washington until December, 1905, and thereafter in charge of the Sub-tropical Laboratory and Gardens at Miami, Florida; professor of botany and bacteriology, Louisiana State University, Baton Rouge, Louisiana, 1908-10; professor of botany, Michigan Agricultural College, September, 1910-.

Children: Bertha Agnes, William Higgins. Address: East Lansing, Michigan.

AGNES HUNT, B. S., was born on a farm near the village of Ridott, Stephenson County, Illinois. She is the daughter of William Hunt of the same place and Jennie Adelaide (Burdick) Hunt. She was educated in the district school; business college at Freeport, Illinois, 1899-1900; graduated from the University of Illinois in 1908 with the degree B. S. She taught two years in the College of Hawaii, Honolulu, Hawaiian Islands; appointed professor of domestic science at M. A. C., September 1, 1910, and resigned July 1, 1915.

JOHN FARRELL MACKLIN is the son of Robert Macklin of Ireland and Margaret (Wrey) of the same country. He was educated at the Worcester High School, Massachusetts, Exeter Academy of New Hampshire, St. Paul's School of Garden City, Long Island, and the University of Pennsylvania. He was director of athletics at Pawling, New York. He was employed in the engineering department of the American Steel and Wire Company, Worcester, Massachusetts. Professor of physical culture and director of athletics at M. A. C. beginning January, 1911.

ANTON CÆSAR CRON was the son of Frederick W. Cron of Mayfield, Wisconsin, and Emma (Utech) C. of Milwaukee, Wisconsin. He was born October 31, 1878, at Milwaukee; married Nina Rosamond Nash of Spokane, Washington, on January 20, 1906. He was educated in the grammar school and high school at Manistee, Michigan; Bethel Military Academy, Fauquier County, Virginia, 1897-98; U. S. Military Academy, 1899 to 1901. He is a Unitarian and a republican. He is a lieutenant in the United States Army; assigned as commandant at the College, September, 1911, and retired June, 1913.

Children: Three boys.

WILLIAM WALTER JOHNSTON, A. M., was born on a farm in Neosho County, Kansas, January 5, 1876. His father's name is Matthew Johnston of Evansville, Indiana; his mother's name was Jennie May Lodge born in New Albany, Indiana. He married Ethelyn Genevieve Thorne who was born in Waterville, Kansas.

When eight years old, his father moved to Erie, Kansas. After training in the common school, he attended Baker University, taking the degree of A. B. in 1902; graduate work at Harvard, graduating in 1905 with the degree of A. M. He is a Methodist Episcopal and independent in politics.

He went to Pullman, Washington in 1905 where he taught English for two years in the State College; in the spring of 1908 he was elected professor of English in the Agricultural and Mechanical College of Oklahoma at



AGNES HUNT.



JOHN FARRELL MACKLIN.



ANTON CAESAR CRON.

Stillwater, remaining for two years as Dean of the Division of Science and Literature; since September, 1912, he has served as professor of English at this college, East Lansing. Residence: East Lansing, Michigan.

Children: Manfred, Henry, Ellen.

JOHN B. DELANCY, B. S., was born April 20, 1876 in Perry county, Pennsylvania. He was the son of William P. and Susan A. (Wolf) of the same place. He married Mary Louise Corrithers, August 2, 1907.

He graduated from Grove College in Grove City, Pennsylvania with the degree of B. S., June 15th, 1903. He is a Protestant and a Republican. He has been an Army officer since October 5, 1904, stationed at Spokane, Alaska, Texas, Indianapolis, the Canal Zone, Panama. Professor of military science and tactics, M. A. C. since July, 1913.

Children: Mary Louise, John B., Helen Elizabeth. Residence: East Lansing, Michigan.



WILLIAM WALTER JOHNSTON.

LOUIS CLARK PLANT, Ph. B., M. S., son of Henry E. Plant of Nunica, Michigan and Jennie S. (Clark) Plant, was born at Nunica November 24, 1870.

He married at Michigan Agricultural College, December 20, 1900 Ella Pearl Kedzie, '98. He graduated with the degree of Ph. B. from the University of Michigan, 1897; graduated with the degree of M. S., from the University of Chicago, 1904.

He taught in the public schools of Ottawa and Allegan counties for four years previous to 1893; instructor in mathematics in Bradley Polytechnic Institute, Peoria, Illinois; professor of mathematics, University of Montana for six years, closing September, 1913.

Appointed professor of mathematics, M. A. C., September, 1913, and still serving.

Children: Margaret Louise, Robert Kedzie. Address: East Lansing.



JOHN B. DeLANCY.



LOUIS CLARK PLANT.

GEORGIA LAURA WHITE, Ph. D., was the daughter of George Leonard White of Cadiz, New York and Laura Amelia (Cravath) White of Homer, New York. She was born at Nashville, Michigan, but at the age of two years went to St. Charles, Minnesota, where her early life was spent. She attended the Normal School at Fredonia, N. Y.; graduated from Lake Erie Seminary, 1894; from Cornell University, 1896; pursued graduate work in political science, sociology and European history at Cornell, 1898-99; at Halle, Germany, 1899-1900; fellow at Cornell in Political science, receiving Ph. D. in 1901; teacher of history and English in high school at New Castle, Indiana, 1896-98; head teacher in Walnut Lane School, Germantown, Pa; instructor in sociology, Smith College, Mass., 1903-1905; associate professor, 1905-1911; dean of women, Olivet College, Michigan. President Lancaster said, "No



GEORGIA LAURA WHITE.

one has come to Olivet since I have known the college, whose coming has promised so much good as does that of Dr. White."

Dean of home economics, Michigan Agricultural College, September, 1913, with leave of absence until the spring term, 1914. Address: East Lansing.

EDWARD HILDRETH RYDER, A. M., son of Joseph Ryder of the state of New York and Sarah (Thayer) Ryder of Plymouth, Michigan, was born in Northville, Michigan, August 9, 1873. He married Georgia A. Smyth of Marshall, Michigan; she graduated from the high school of Union City and the State Normal College. Mr. Ryder graduated from the State Normal College in 1893, from the University of Michigan in 1903 with the degree of A. B.; from the same University in 1904 with the degree of A. M. He is an active member of the Congregational Church and by preference a Republican. He was instructor in the high school, at Traverse City, 1893-97; superin-



EDWARD HILDRETH RYDER.



CHARLES PARKER HALLIGAN.



JOSEPH ALBERT POLSON.



ARTHUR JOHN CLARK.

tendent of schools at Plymouth, 1897-99; principal of the high school at Traverse City, 1899-1902; assistant in economics in the University of Michigan, 1903-04; assistant in American history in the University, 1904-5; instructor, assistant professor and associate professor successively at this College, 1905-1915. In 1913, Mr. Ryder was made secretary of the Faculty, succeeding in this capacity, Prof. Warren Babcock, and in 1915 dean of the Summer School, Michigan Agricultural College.

Children: One daughter, Ruth Anna.

CHARLES PARKER HALLIGAN, B. S., son of John Halligan and Margaret (McCarthy) Halligan of Boston, Massachusetts, was born July 4, 1881. He married Lillian Irene Proulx, September 4, 1907. She was the daughter of M. J. and Mary J. (Hamell) Proulx of Hatfield, Mass. Mr. Halligan graduated from the English High School of Boston, 1899; from Massachusetts Agricultural College, 1903. He taught horticulture for two years at the National Farm School, Penn.; instructor in landscape gardening in Massachusetts Agricultural College; instructor in horticulture, Michigan Agricultural College, April, 1907; assistant professor in horticulture, Michigan Agricultural College, 1908; associate professor in horticulture, 1913.

Children: None. Address: East Lansing.

JOSEPH ALBERT POLSON, M. E., Associate Professor of Mechanical Engineering, May, 1913. He was born in Central Iowa, March 20, 1877; married Bessie C. Lee in Milwaukee, Wisconsin, December 19, 1906; graduated from Purdue University, Indiana in June, 1905 with the degree of B. S.; from the same University in 1911 with the degree of Mechanical Engineer.

He is a member of the American Society of Mechanical Engineers; American Society for Testing Materials; National Tire Protection Association. He was elected instructor September, 1906; assistant professor in May, 1908; associate professor, 1913.

ARTHUR JOHN CLARK, B. A. Son of Robert W. Clark, London, England, and Corretta (Townsend) Clark, Wayne, Michigan. Mr. Clark was born November 23, 1880, at Chicago, Ill., married Miss M. Elva Crawford, of Barron, Wisconsin, June 24, 1908. Attended public schools and high school at Janesville, Wisconsin. After leaving high school worked a year and a half clerking in drug store and for a year and a half as assistant secretary of the Y. M. C. A. at Janesville. Entered University of Wisconsin in fall of 1901, specialized in study of chemistry and graduated June, 1905. Science teacher in high school at Evansville, Wis., 1905-1906. Entered the chemical department of M. A. C. as instructor in the fall of 1906; assistant professor of chemistry, 1909-1914; associate professor of chemistry, 1914. Graduate study at University of Wisconsin summer sessions, 1911, 1912, 1913; entered the University of Chicago for graduate work, 1915, summer session.

Member A. X. Σ. fraternity; member American Chemical Society, etc.

Residence: East Lansing, Michigan.

LIBRARIANS.

There are no records available giving the names of persons who served as librarians previous to 1872.

Professor George T. Fairchild served 1872-79. Professor Elias J. MacEwan served 1880-83.

MRS. MARY J. C. MERRILL (Mrs. Louis G. Carpenter), B. S., M. S. Left a widow, entered M. A. C. as a student from the home farm, graduating with the class of 1881, being the second woman graduate in College history. After completing a five-year term as college librarian she was married to Prof. Louis G. Carpenter of the department of Mathematics, Colorado Agricultural College. Their residence is now Denver, Colorado.

MISS MARY MOUAT ABBOT, (Mrs. C. M. Moore), eldest child and only daughter of President T. C. Abbot, was born on the M. A. C. campus January 7, 1863, where she spent the most of her life until her marriage to Cleves M. Moore of Cincinnati, Ohio. Shortly after the death of President Abbot in 1891, Mrs. Moore with her mother and family removed to San Gabriel, California. Here she became associated with the work of a ladies' library club and for some time acted as their librarian and secretary. Mrs. Moore died March 20, 1903, at Los Angeles, from the effects of anesthetics administered for a slight surgical operation.

MISS JANE SKELLIE SINCLAIR, (Mrs. Jacob I. Deal). She was the daughter of Daniel H. Sinclair of New York State, and Jane (Proudfit) Sinclair of the same state. Served as librarian from August 1889 to August, 1891. She married Jacob I. Deal, December 31, 1891 and resided in Jonesville, Michigan. She died April 19, 1898 at Jonesville.

MRS. LINDA EOLINE (VOUGHT) LANDON was the daughter of Justus Thorn Vought, born in Peekskill, New York, and Jane Carr Vought, both of whom later moved to Niles, Michigan. She married Rufus W. Landon of Niles, Michigan, 1877. He died in 1886. She served some time as teacher in the public schools of Kalamazoo, Michigan. She began a long and valuable service as librarian of Michigan Agricultural College in 1891. There are two sons, Rufus and Lee.



MRS. MARY J. C. MERRILL.

MISS MARY MOUAT ABBOT. (Mrs. C. M. Moore.)



MISS JANE SKELLIE SINCLAIR (Mrs. Jacob I. Deal.)

MRS. LINDA EOLINE LANDON.

APPENDIX.

APPENDIX A.

ESTABLISHING A STATE AGRICULTURAL COLLEGE.

AN ACT for the establishment of a State Agricultural School. (3) See Session Laws of 1855, Act No. 130, approved February 12th, 1855.

Section 1. The People of the State of Michigan enact, that the president and executive committee of the Michigan State Agricultural Society, be and are hereby authorized to select, subject to the State Board of Education, a location and site for a State Agricultural School, within ten miles of Lansing; and subject to such approval, contract for and purchase for the State of Michigan, such lands, not less than five hundred acres, nor more than one thousand acres, in one body for the purpose of an experimental farm and site for such Agricultural School: Provided, That the amount to be paid for such farm and site shall not exceed fifteen dollars per acre, and that the conveyance or conveyances be made to the State of Michigan.

Section 2. There is hereby appropriated twenty-two sections of salt spring lands, or the money arising from the sale thereof, referred to in article 13, section 11, of the constitution of the State of Michigan, for the purchase of land for such site and location, and the preparation thereof, the erection of buildings, the purchase of furniture, apparatus, library and implements, payment of professors and teachers, and such other necessary expenses to be incurred in the establishment and successful operation of said school.

Section 3. Upon the execution and delivery to the secretary of state of the proper conveyance or conveyances of the land, the purchase of which is provided for in the first section of this act, and the certificate of the attorney general that he has examined the title to the same, and finds it unencumbered, and that the conveyance or conveyances are executed in due form, and a certificate from the president and secretary of the Board of Education, that the same is in accordance with the contract or contracts for the purchase of the same, and that the location has been approved by them, the auditor general shall draw his warrant or warrants on the state treasurer for the amount of such purchase, in favor of the party or parties to whom such sum or sums shall be due, payable out of said salt spring lands, or money accruing from the sale of the same; and the said certificates in this section mentioned, shall be filed and preserved in the office of the secretary of state.

Section 4. Upon the purchase of such location and site, there shall be established on such site, under the direction and supervision of the State Board of Education, an Agricultural School, by the name and style of the Agricultural College of the State of Michigan, and the chief purpose and design of which shall be to improve and teach the science and practice of agriculture.

Section 5. The course of instruction in said college shall include the following branches of education, viz: an English and scientific course, natural philosophy, chemistry, botany, animal and vegetable anatomy and physiology, geology, mineralogy, meteorology, entomology, veterinary art, mensuration, leveling and political economy, with bookkeeping and the mechanic

arts which are directly connected with agriculture, and such others as the Board of Education may from time to time see fit to prescribe, having reference to the objects specified in the previous section; and the said board may establish such professorships, and employ such professors and teachers, to be called the Board of Instruction of said college, for the instruction aforesaid, as they may judge best for such object: Provided, The sum paid such professors and teachers for the first year after said college shall go into operation, shall not exceed the sum of five thousand dollars, and for the next year, not exceeding the sum of six thousand dollars, and for any years thereafter, such a sum as the State Board of Education may deem necessary, for the successful operation of the institution. Tuition in said institution shall be forever free to pupils from this state, and any number of pupils may be admitted who shall apply from any part of this state: Provided, That in case more pupils apply than can be accommodated or taught, then said board shall adopt some equitable plan giving to each county a number according to the ratio of population, as it shall appear from the census last taken; and in that case, those from each county shall be admitted in the order in which they shall apply, until the quota of such county be full.

Section 6. There shall be two scholastic terms in each year, the first term commencing on the first Wednesday in April, and ending on the last Wednesday in October, the second term commencing the first Wednesday in December, and ending on the last Wednesday in February; and no pupil shall be received for less than one term, unless by special permission from the Board of Instruction.

Section 7. The Board of Education, upon consultation with the Board of Instruction, shall, from time to time, fix and establish rules as to the number of hours which shall be devoted to manual labor and to study, which may be different in different terms or seasons; but during the first term in such year, the time devoted to labor shall not be less than three, nor more than four hours each day; and no student or pupil of said college shall be exempt from such labor, except in case of sickness or other infirmity.

Section 8. The Board of Education shall appoint one of the professors in said college to be the president thereof, and one to be its secretary, and one to be its treasurer; and the Board of Instruction may establish such rules and regulations from time to time, for the government of said college and instruction therein, as they may deem proper in any matter not regulated by the Board of Education; and the rules and regulations adopted by such Board of Instruction, shall remain in full force until altered by said Board of Education. And said Board of Instruction shall have power, subject to the approval of the Board of Education, to establish by-laws for the government and discipline of the pupils of said college, in regard to conduct and behavior, and to affix such pecuniary penalties as they may deem proper, and to prescribe the causes for expulsion or dismissal of any such pupil, which by-laws shall have the force of law, unless altered, modified or repealed by the Board of Education or the legislature; and the Board of Education shall fix the compensation to be credited or paid for the labor performed by pupils, under the provisions of section seven of this act.

Section 9. The president of said Board of Instruction shall preside at all meetings of said board, except in cases of sickness or absence; in which case the board may elect one of their number president pro-tempore; and it shall be the duty of the president to see that all the regulations established

by this act by the Board of Education and by the Board of Instruction, in regard to the government and instruction in said college, be enforced.

Section 10. The secretary of said Board of Instruction shall record all the proceedings of said Board, and all the regulations and by-laws for the government of said college, and shall publish the same, and furnish a copy thereof to the governor of this state, to each member of the Board of Education, to the county clerk of each county, and to the clerk of each organized township in this state. He shall also keep a full record of all improvements and experiments made on said lands, their cost and results. He shall also keep a careful account with each field, in connection with a plan of the farming lands or farm, exhibiting the position of each, in which shall be shown the manner and cost of preparing the ground, the kind of crop, time of planting or sowing, the after condition, the time and manner of harvesting, the labor devoted to each process, and its cost price, with the cost of preparing the matured crop, for market, and the price for which it was sold, and of such other matters as the Boards of Education and Instruction, or either of them, may require of him; and he shall furnish a copy thereof at the end of each term to the president of the Board of Education; and the said record shall, at all reasonable hours, be open to the inspection of any citizen of this state.

Section 11. The treasurer shall receive and keep all moneys arising from the sale of products of the farm, and from fines and penalties that may be imposed; and shall give bonds in such sum as the Board of Education may require. He shall pay over all the moneys upon the warrant of the president, countersigned by the secretary, on account of such contingent expenses of the institution as may arise. He shall render annually, in the month of December, to the Board of Education, and as often as required by said board, a full and true account of all moneys received and disbursed by him; stating for what received and paid, and shall produce vouchers for such payments. The surplus money, if any remain in his hands at the time of rendering such account, shall, if required by said board, be paid over to the state treasurer, to be placed to the credit of said institution.

Section 12. After said college shall have commenced its first term, the superintendent of public instruction shall appoint visitors for the same, who shall perform the like duties required of such visitors by law, in reference to the State Normal School.

Section 13. This act shall take effect immediately.

APPENDIX B.

RE-ORGANIZATION OF THE COLLEGE.

I quote a few sections of the Act No. 188, Laws 1861.

Sec. 1. "The people of the State of Michigan enact, That a board is hereby constituted and established, which shall be known under the name and style of 'the State Board of Agriculture.' It shall consist of six members, besides the governor of the state, and the president of the State Agricultural College, who shall be ex-officio members of the Board.

Sec. 3. "Any vacancy in the said Board, caused by death, resignation, or removal from the state, may be filled by a majority of the members. A majority shall be a quorum for the transaction of business. The members of the Board shall receive no per diem compensation for their services, but shall be paid their traveling and other expenses while employed on business of the Board.

Sec. 4. "They shall meet quarterly, at the State Agricultural College, viz: on the last Wednesdays of February, May, August and November, of each year, and may meet at such other times and places as they may determine.

Sec. 5. "At their first meeting the members shall choose one of their number as president of their Board.

Sec. 6. "At their first meeting, or as soon after as a competent and suitable person can be obtained, they shall choose a secretary of the Board.

Sec. 8. "The secretary of the Board shall address circulars to societies, and the best practical farmers in the State and elsewhere, with the view of eliciting information upon the newest and best mode of culture of those products, vegetables, trees, etc., adapted to the soil and climate of this state; also, on all subjects connected with field culture, horticulture, stock-raising and the dairy. He shall encourage the formation of agricultural societies throughout the state, and purchase, receive, and distribute such rare and valuable seeds, plants, shrubbery, and trees, as it may be in his power to procure from the general government and other sources as may be adapted to our climate and soils. He shall also encourage the importation of improved breeds of horses, cattle, sheep, hogs, and other live stock, and the invention and improvement of labor saving implements of husbandry, and diffuse information in relation to the same. He shall encourage such domestic industry and household arts as are calculated to promote the general thrift, wealth and resources of the state. He shall aid as far as possible, in obtaining contributions to the museums and the library of the State Agricultural College, and thus to aid in the promotion of agriculture, science, and literature.

Sec. 9. "The seeds, plants, trees and shrubbery received by the secretary, and not needed by the College, shall be, as far as possible, distributed equally throughout the state, and placed in the hands of those farmers and others who will agree to cultivate them properly, and return to the secretary's office a reasonable proportion of the products thereof, with a full statement of the mode of cultivation, and such other information as may be necessary to ascertain their value for general cultivation in the state. Information

in regard to agriculture may be published by him, from time to time, in the newspapers of the state, provided it does not involve any expense to the state.

Sec. 16. "A full course of study in the institution shall embrace not less than four years. The State Board of Agriculture may institute a winter course of lectures, for others than students of the institution, under necessary rules and regulations.

Sec. 17. "The academical term shall extend from the last Wednesday in February to the last Wednesday of November, in each year; the vacation shall extend from the last Wednesday in November to the last Wednesday in February, and there shall be no other vacation whatever.

Sec. 20. "The State Board of Agriculture shall have the general control and supervision of the State Agricultural College, the farm pertaining thereto, and the lands which may be vested in the College by state legislation.

Sec. 23. "The Board shall have power to regulate the course of instruction, and prescribe, with the advice of the faculty, the books to be used in the institution; and also to confer, for similar or equal attainments, similar degrees or testimonials to those conferred by the University of Michigan.

Sec. 24. "The president, professors, farm manager and tutors, shall constitute the faculty of the State Agricultural College. The president of the College shall be president of the faculty. The secretary of the State Board of Agriculture shall be a member and secretary of the faculty.

Sec. 25. "The faculty shall pass all needful rules and regulations necessary to the government and discipline on the College, regulating the routine of labor, study, meals, and the duties and exercises, and all such rules and regulations as are necessary to the preservation of morals, decorum and health.

Sec. 27. "No communication at any other time, from members of the faculty, shall be entertained by the Board, unless they have been submitted to a meeting of the faculty, and sanctioned by a majority.

Sec. 34. "All the swamp lands granted to the State of Michigan by act of congress, approved September twenty-eight, one thousand eight hundred and fifty, situate in the townships of Lansing and Meridian, in the county of Ingham, and Dewitt and Bath, in the county of Clinton, of which no sale has been made, or for which no certificates of sale have been issued by commissioner of the Land Office, are hereby granted, and vested in the State Board of Agriculture, and placed in the possession of the State Agricultural College, for the exclusive use and benefit of the institution, subject only to the provisions relating to drainage and reclamation of the act of congress donating the same to the state.

Sec. 36. "David Carpenter, of Lenawee county; Justus Gage, of Cass county; Philo Parsons, of Wayne county; Hezekiah G. Wells, of Kalamazoo county; Silas A. Yerkes, of Kent county; and Charles Rich, of Lapeer county, are hereby constituted and appointed the first State Board of Agriculture. The governor of the state is hereby authorized to call at as early a date as is practicable, and they shall determine by lot the several periods of service, two of whom shall serve for two years, two of whom shall serve for four years, and two of whom shall serve for six years respectively." (9)

APPENDIX C.

SELECTING AND CARE OF LANDS.

AN ACT to provide for the selection, care and disposition of the lands donated to the State of Michigan, by act of Congress, approved July second, eighteen hundred sixty-two, for the endowment of colleges for the benefit of agriculture and the mechanic arts.

Act No. 140, Laws 1863.

Section 1. "The People of the State of Michigan enact, That the Governor, the Auditor General, Secretary of State, State Treasurer, Attorney General and Commissioner of the State Land Office, shall constitute a board, to be known as the agricultural land grant board, and said Board shall have the control and management of the selection, the care and disposal of the lands granted to this state by act of congress. * * * * *

Sec. 8. "It shall be the duty of said land grant board, from time to time, as money is received from the sales of said lands, to cause the same to be invested in the stocks of the United States, of this state, or some other safe stocks, yielding not less than five per cent annually, upon the par value of such stocks, and to keep the same invested to constitute a perpetual fund, the capital of which shall remain forever undiminished; and the annual interest shall be regularly applied, under the direction of the State Board of Agriculture, to the endowment, support and maintenance of the State Agricultural College, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." (9)

APPENDIX D.

ESTABLISHING A MILITARY SCHOOL.

AN ACT to establish a Military School in connection with the Agricultural College. Act 211, Laws 1863.

Sec. 1. "The People of the State of Michigan enact, That in addition to the course of instruction already provided by law for the Agricultural College of this state, there shall be added military tactics and military engineering.

Sec. 2. "The State Board of Agriculture are hereby authorized and required to make such additional rules and regulations for the government and control of the Agricultural College as may be necessary to carry into effect the provisions of section one of this act." (9)

The passing of this act accomplished little or nothing, as there was no appropriation of money made to carry it into effect.

Since the legislature accepted the proceeds of the National Land Grant, in 1862, and the accompanying obligations, the question was occasionally asked: why the Board of Agriculture did not at once open schools in the mechanic arts and in military tactics. Referring to this question, the following is taken from the report of the faculty, made by the president of the College, T. C. Abbot, for the year 1864, as it appeared in the report of the Secretary of the State Board of Agriculture for that year.

"There are good reasons, as it seems to us, why no attempt should be made, at present, to extend the sphere of the operations of the college much beyond what has hitherto been its aims; either by the addition of departments of a different nature here, by branch institutions, or by appropriations of a portion of the funds for the purpose of making experiments in other sections of the state.

APPENDIX E.

MEMBERS OF THE STATE BOARD OF AGRICULTURE, FACULTY
AND STUDENTS IN THE CIVIL WAR, 1861-1865.

(Most of the following pages were copied from Records of Service of Michigan Volunteers in the Civil War, published by the State of Michigan.)

In accordance with a suggestion found in the *Speculum*, April, 1887, the writer presents the list of names of members of the board, faculty and students who were in the Union army during a portion of the Civil War. To some extent this list explains how it was that the number of students during the period dwindled to forty-eight. No doubt this list contains some errors and is incomplete.

At the reunion of the Agricultural College boys of Ionia county, on the first evening of the year, 1887, Hon. F. B. Morse, LL. D. '91 an old M. A. C. boy, and a one-armed soldier, responded to the toast, "The boys who left the college to fight for their country, may their example be an inspiration to the boys who leave the college to fight the battle of life." In the course of his speech, which was listened to with the eager earnestness that it well deserved, the honorable justice of the supreme court, touched upon a point that met our hearty approval. He suggested that it would be fitting to establish a memorial in honor of the boys that fought for their country and were left dead upon her fields. Surely we should not forget our heroes, and what heroes could be more dear to us or worthy to be remembered, than they that left the green old campus to which we are so much attached, and marched to fields whose green was to be dyed with their blood. Their patriotism was of so noble a quality that their lives were freely given; let ours not be so inferior as to allow theirs to be wholly forgotten. On that spot where their thoughts turned while trudging on in the long weary march, or while they lay wounded and dying on the battle-scorched fields of Gettysburg, let there be erected some frail memorial that shall implore the passing tribute of a sigh."

See Chapter XVI concerning an edifice in honor of the class of 1861.

George W. Haigh with '62 writes from Mankato, Minn., March 28, 1896:

"The recommendation of the faculty to obtain the war records of its graduates is certainly most wise.

"I was associated with Gilbert A. Dickey during his entire service in the army, first in Capt. Howland's company of engineers, which went out under Gen. Fremont. In that company eight students enlisted, Dickey, Prentiss, Clute, A. F. Allen, Beebe, Benham, my brother Thomas and myself; but we were soon discharged, as we were improperly organized, and when Gen. Fremont was relieved from the command of the Department of Missouri, we were retired. The system of signals by means of flags introduced in the army by this company was retained and became of great value to the service. As I remember this part of my service in the army it seems like a fine rollicking outing. Good company, little but pleasant duties, swinging of flags and riding over the beautiful prairies of southern Missouri. Dickey was the first sergeant of this company and he obtained that knowledge of the

commissary department that was so useful to him as commissary sergeant of the 24th Michigan Infantry.

"In August, 1862, we both enlisted in the 24th, he in the regimental non-commissioned staff and I, as first sergeant of a company, had ample opportunity to become familiar with the difficulties and perplexities of his position of supplying rations for a thousand men. There was never a word of fault found with his work in this department, either by officers or hungry privates. His faithfulness in this work soon earned him promotion to second lieutenant of company G; this position gave him more leisure and I saw more of him than before. He became a most excellent drill master.

"You are mistaken (General Catalogue of 1900); he did not fall while storming a redoubt at Gettysburg, but was shot and instantly killed while we were maintaining a difficult line of battle without breastworks and were attacked by overwhelming numbers of the rebels. My position was near the right of the line; Dickey's on the left. During the lull before the attack I went down and had a talk with him and was probably the last person that engaged him in friendly conversation. I found him reading his Bible. We talked a few moments and looked at the lines of the enemy filing through the timber and preparing for the advance. We said 'good-bye' and I returned to my post and soon came the shouting rebels and poor Dickey was no more, and I, wounded, was finding my way to the rear.

"Two years ago I was at Gettysburg, and visited his grave in the shadow of the government monument."

Alexander, Samuel, (a) 60-61. Member Co. G, 3d Michigan Volunteer Infantry, 1861-62. Transferred to head of topographical department, 3d Army Corps. Teacher, farmer and fruit grower, Birmingham, Mich.

Alger, Russell A., Detroit. Entered service in company C, Second Cavalry at organization, as captain, Sept. 2, 1861, at Grand Rapids for 3 years, age 25. Commissioned Sept. 2, 1861. Mustered, Oct. 2, 1861. Commissioned major, April 2, 1862. Wounded in action and taken prisoner at Boonville, Miss., July 1, 1862. Escaped same day. Resigned, Oct. 27, 1862. Commissioned lieutenant colonel, Sixth Cavalry at organization, Oct. 16, 1862. Mustered, Oct. 30, 1862. Commissioned colonel, Fifth Cavalry, Feb. 28, 1863. Mustered, June 11, 1863. Wounded at Boonsboro, Md., July 8, 1863. Returned to regiment, Sept. 13, 1863. Commanding brigade from Jan. to Aug., 1864. Resigned and honorably discharged, Sept. 20, 1864. Brevet major general, U. S. Volunteers, June 11, 1866, for gallant and meritorious services during the war. Governor, 1885-1886; secretary of war, 1897. Died 1907.

Allen, Albert F., B. S., 1861; M. A., 1876. Manchester. Enlisted in Howland's Engineers, Sept. 16, 1861, at Battle Creek, for 3 years, age 24. Mustered, Oct. 9, 1861. Mustered out at St. Louis, Mo. Jan. 8, 1862.

Allen, Edward P., '58-59., Vassar. Entered service in company A, Twentieth Infantry, at organization as first lieutenant, age 24. Commissioned, July 29, 1864. Mustered, Sept. 3, 1864. Commissioned adjutant, March 27, 1865. Discharged to accept promotion, Aug. 9, 1865. Commissioned captain, company H, July 7, 1865. Mustered, Aug. 10, 1865. Mustered out at Murfreesboro, Tenn., Sept. 6, 1865. (See Members of State Board.)

Atchison, Charles. (a) 80-82. Corporal, Co. A, 5th Missouri Volunteer Infantry, 1898. 309 E. 12th St., Kansas City, Mo.

Baily, Isaac B., '57-59, Leoni. Enlisted in company D, Twelfth Infantry, Nov. 22, 1861, at Leoni, for 3 years, age 21. Mustered, Jan. 8, 1862. Taken

prisoner at Shiloh, Tenn., April 6, 1862. Died of disease in prison at Atlanta, Ga., May 2, 1862.

Barker, Frederick L., '67-71 (Veteran). Enlisted in company K, Third Infantry, May 13, 1861, at Grand Rapids, for 3 years, age 19. Mustered, June 10, 1861. Re-enlisted as sergeant, Dec. 24, 1863, at Brandy Station, Va. Mustered, Dec. 24, 1863. Wounded in action at Wilderness, Va., May 5, 1864. Transferred to company I, Fifth Infantry, June 10, 1864. First Sergeant. Commissioned second lieutenant, June 10, 1864. Mustered, Aug. 12, 1864. Commissioned first lieutenant, company H, Oct. 14, 1864. Mustered, Nov. 2, 1864. Commissioned captain, Nov. 7, 1864. Mustered, Feb. 4, 1865. Wounded in action at Petersburg, Pa. Mustered out at Jeffersonville, Ind., July 5, 1865. Was in the following battles: Bull Run, Yorktown, Fair Oaks, Glendale, Malvern Hill, Groveton, Chantilly, Fredericksburg, Chancellorsville, Gettysburg, Kelly's Ford, Locust Grove, Mine Run, Wilderness, Deep Bottom, Boydton Plank Road and Petersburg. Died Nov. 30, 1888.

Barney, Henry Lewis. (a) 57-58, 2nd lieutenant Civil War; farmer, teacher, register of deeds, Cass County, January, 1873-January, 1877. Died June 28, 1911.

Beebe, Leonard Vernal, Stockbridge. Enlisted in Howland's Engineers Sept. 16, 1861 at Battle Creek, for 3 years, age 25. Mustered, Oct. 9, 1861. Mustered out at St. Louis, Mo. Jan. 8, 1862. With Mutual Life Ins. Company, Portland, Me. Died Aug. 11, 1904.

Benham, Henry D., Eaton Rapids. Enlisted in Howland's Engineers Sept. 16, 1861 at Battle Creek, for three years, age 21. Enlisted in company D, Seventh Cavalry, as Sergeant, Sept. 4, 1862, at Eaton Rapids, for 3 years, Mustered, Nov. 13, 1862. Discharged to accept promotion Feb. 24, 1864. Entered service in company B, First Colored Infantry as first lieutenant. Commissioned March 7, 1864. Died at Beaufort, S. C. July 3, 1864.

Benham, Isaac D. M., 57-79. Died in the army at Louisville, Ky., 1862.

Begole, William M., Flint, 60-62. Enlisted in company K, Twenty-third Infantry as first sergeant, Aug. 4, 1862, at Flint, for 3 years, age 19. Mustered, Sept. 12, 1862. Discharged to accept promotion March 27, 1863. Commissioned second lieutenant, company A, February 6, 1863. Mustered, March 27, 1863. Commissioned first lieutenant, June 20, 1864. Died at Chattanooga, Tenn., Oct. 15, 1864 from wounds received in action June 16, 1864.

Bigelow, Edwin B., 58-60. First sergeant Company B, 5th Michigan Cavalry; captain and brevet-major 9th U. S. Cavalry. Died at Fort Davis, Tex., January 16, 1870 of wounds received at Gettysburg, Pa.

Birney, James Gillespie, 58-59, company C, 1st Sergeant Oct. 14, 1862; 2nd lieutenant 7th Michigan Cavalry, Oct. 15, 1862; 1st lieutenant July, 1863; captain Company D, March 18, 1864; transferred to company C, 1st Cavalry Sept. 17, 1865, 1st U. S. Artillery, colored, Dec. 1, 1869; at close of war A. A. O. G., Department East Tennessee. Druggist. 402 Steward Ave., Jackson, Mich.

Blair, Austin, Jackson, member ex-officio of the State Board of Agriculture, 1861-65; president of the State Board of Agriculture; state senate, 1855; Governor, 1860, and in 1862 widely known as the War Governor; 1866 and in 1868 and in 1870 elected to congress; regent of the University, 1881. Died Aug. 6, 1894.

Blakeslee, Nathan P., 58-60, Oakland County. Enlisted in Company A First Infantry, July 5, 1861, at Ann Arbor, for 3 years, age 19. Mustered,

July 13, 1861, corporal. Discharged for disability at Alexandria, Va., Nov. 23, 1862. Died at St. Louis, Mich., February 1, 1888.

Bliss, Aaron Thomas, was captain company D, 10th New York Cavalry. (See his biography in this volume.)

Bradley, William Foster, 58-59, Adrian. Enlisted in company G, Fourth Infantry, March 10, 1862 at Adrian. On detached service with company G, First Infantry by order July 2, 1864. Discharged at Washington, D. C., Aug. 25, 1864, to accept commission. Re-entered service as first lieutenant and adjutant, Fourth Infantry, Aug. 31, 1864. Commissioned to date July 26, 1864. Mustered, Aug. 31, 1864. Acting assistant adjutant general, Third Brigade, Oct., Nov., and Dec., 1865. Mustered out at Houston, Texas, May 26, 1866. Brevet captain and major United States Volunteers, March 13, 1865, for meritorious services during the war.

Brewer, Emory L., 57-59, Bennington. Enlisted in company K, Fifth Cavalry, as corporal, Aug. 30, 1862, at Detroit, for 3 years, age 26. Mustered, Sept. 2, 1862. Promoted sergeant. First sergeant. Commissioned second lieutenant, company G, Feb. 27, 1864. Mustered, March 26, 1864. Honorably discharged Oct. 8, 1864, on account of wounds received in action May 28, 1864. Died July 30, 1901 at Owosso, Michigan. Buried at Owosso, Mich.

Brooks, Ransom M. (Veteran) Clinton County. Enlisted in company B, 8th Infantry, Aug. 14, 1861, at St. Johns for 3 years, age 22. Mustered, Sept. 23, 1861. Wounded in action on James Island, S. C. June 16, 1862. Re-enlisted as sergeant Feb. 17, 1864 at Detroit, Mich. Mustered, Feb. 17, 1864. Wounded and taken prisoner in action at the Wilderness, Va., May 5, 1864. Discharged at Camp Chase, Ohio. June 13, 1865. Died at Lansing, Mich., February 17, 1890.

Browning, Charles H., 59-60. Enlisted in company M, Eleventh Cavalry, Dec. 30, 1863, at Vermontville, age 22. Mustered, Jan. 5, 1864. Sergeant. Discharged at Pulaski, Tenn. Aug. 10, 1865. Present residence, Battle Creek, Mich.

Canfield, Augustus H., 58-59. Enlisted in company I, 9th Infantry, as sergeant Aug. 15, 1861, at Mt. Clemens, for 3 years, age 20. Mustered, Oct. 15, 1861. First sergeant. Commissioned second lieutenant, company G, Sept. 23, 1862. Mustered, Feb. 12, 1863. Commissioned first lieutenant company H, April 25, 1863. Mustered, Aug. 3, 1863. Commissioned adjutant, Oct. 14, 1864. Discharged at expiration of term of service Nov. 16, 1864. Died Oct. 14, 1889. Buried at Mt. Clemens, Mich.

Carpenter, Henry B., 57-58. Lansing. Enlisted in company A, 20th Infantry as corporal, Aug. 9, 1862 at Lansing for 3 years, age 27. Mustered, Aug. 18, 1862. Sergeant, Oct. 18, 1862. First sergeant, Jan. 17, 1863. Commissioned second lieutenant, June 20, 1863. Mustered, Sept. 1, 1863. Wounded in action at Cold Harbor, Va., June 3, 1864. Commissioned first lieutenant, May 12, 1864. Commissioned captain, company B, Oct. 24, 1864. Mustered, Nov. 30, 1864. Aide de camp on Brigade Staff from Feb. 17, 1865 to April, 1865. Assistant provost marshal, second brigade first division, 9th Army Corps, May 1, 1865. Mustered out and honorably discharged at Delaney House, D. C., May 30, 1865. Lansing, Michigan.

Carpenter, Otis W., 61-62, Delta. Enlisted in company D, Seventh Cavalry, as sergeant, Sept. 6, 1862, at Delta, for 3 years, age 22. Mustered, Nov. 13, 1862. Transferred to company M, Aug. 5, 1863. Taken prisoner

at Trevillian Station, Va., June 11, 1864. Died of disease at Annapolis, Md., Dec. 6, 1864. Buried at Annapolis, Md.

Carr, Alphonso W. 58-59. Captain 1st Michigan Volunteer Infantry, Nov. 11, 1863. Killed in action at Trevillian Station, Va. June 12, 1864.

Case, Daniel Sampson, 57-59. Graduate of West Point, 1864. First lieutenant and adjutant 103d N. Y. Volunteers, 1864-65. Died at Iron Mountain, Mo., December 10, 1870.

Chase, Frank R., Otisco. 59-60. Entered service in company B, 25th Infantry, at organization, as first lieutenant, commissioned, Aug. 10, 1862. Mustered, Sept. 11, 1862. Resigned and honorably discharged Nov. 14, 1863 to accept appointment in invalid corps. Accepted appointment, Nov. 15, 1863. Assigned to company D, Tenth Regiment. Mustered out and honorably discharged Jan. 1, 1868, as brevet major and first lieutenant, 10th Regiment, Veteran Reserve Corps. Present address; Smyrna, Mich.

Christiancy, Henry C., Monroe County. 57-58. Enlisted in company F, 1st Infantry, April 20, 1861, at Detroit, for 3 months, age 19. Mustered, May 1, 1861. Discharged, July 12, 1861, by S. O. of General McDowell. Re-entered service as second lieutenant in company A, 1st Infantry for 3 years at organization. Commissioned, Aug. 17, 1861. Mustered, Aug. 17, 1861. Commissioned first lieutenant, company F, April 28, 1862. Transferred to company A, July 13, 1862. Aide de camp on General Humphrey's staff from Nov., 1862 to Sept., 1864. Commissioned captain, Oct. 20, 1862. Declined commission. Mustered out at expiration of term of service near Weldon R. R., Sept. 24, 1864. Brevet major and lieutenant colonel, U. S. Volunteers, March 13, 1865 for gallant and meritorious services during the war.

Clark, Edward G., Monroe, Mich. 57-58. Enlisted in company H, 18th Infantry, Aug. 15, 1862, at Monroe, for 3 years age 23. Mustered, Aug. 26, 1862. Taken prisoner and paroled at Snow's Pond, Ky., Sept. 25, 1862. Discharged at Detroit, Mich. June 5, 1865.

Clute, Oscar, M. S., 1865, LL. D., 1893. President of Florida Agricultural College and director of the Experiment Station, 1893-97; Clergyman. Supt. of ranch, Pomona, Cal. (See Presidents, page 91). (See Members of the Faculty, page 393).

Cowles, Albert E., Lansing. 57-59. LL. D. (Univ. of Mich.), 1862. Enlisted in company A, 20th Infantry, Aug. 9, 1862, at Lansing, for 3 years, age 24. Mustered, Aug. 18, 1862. Corporal Aug. 18, 1862. Discharged for disability at Louisville, Ky. May 23, 1863. City clerk, Lansing, 1864-67; city attorney, 1868-71; clerk of supreme court, 1867-69; judge of probate, Ingham County, 1893-97. Lawyer, Lansing. Killed by street car in Los Angeles, California, Nov. 25, 1906.

Dickerson, Lyman W., 67-68. Member company F, 6th Ohio Volunteer Cavalry. General manager of the Comstock Mfg. Co., 410 Locust St., Kalamazoo, Mich.

Dickey, Gilbert A., Marshall. Enlisted in Howland's Engineers as first sergeant, Sept. 16, 1861, at Battle Creek, for 3 years, age 20. Mustered, Oct. 9, 1861. Mustered out at St. Louis, Mo., Jan. 8, 1862. Enlisted in company E, 24th Infantry, Aug. 12, 1862, at Detroit for 3 years, age 19. Mustered, Aug. 13, 1862. Commissary sergeant, Dec. 2, 1862. Sergeant major, Jan. 27, 1863. Commissioned second lieutenant, company G, March 10, 1863. Mustered, April 17, 1863. Killed in action at Gettysburg, Pa.,

July 1, 1863. Buried in National Cemetery, Gettysburg, Pa. (See note of Geo. W. Haigh on page 483.)

Eggleston, Charles E., Coldwater, 59-60. Entered service in company C, First Infantry as first lieutenant, April 24, 1861, at Coldwater, for 3 months, age 19. Commissioned, May 1, 1861. Mustered, May 1, 1861. Mustered out at Detroit, Mich., Aug. 7, 1861. Present residence, 421 So. Summit St., Dayton, Ohio.

Elder, John A., Lansing, 57-58. Enlisted in company E, 8th Infantry, as corporal, June 14, 1861, for 3 years, age 25. Mustered, Jan. 10, 1862. First sergeant. Discharged to accept promotion May 13, 1863. Commissioned second lieutenant, March 27, 1863. Mustered, May 13, 1863. Wounded in action at Spottsylvania, Va., May 12, 1864. Commissioned captain, company I, Jan. 8, 1865. Mustered, February 19, 1865. Commanding company D from November, 1864 to July 1, 1865. Mustered out at Delaney House, D. C. July 30, 1865. Died April 10, 1889. Buried at Lansing, Mich.

Eldred, Louis S., 61-63. Enlisted in company F, 3d cavalry, Feb. 27, 1864, at Climax for 3 years, age 22. Mustered, Feb. 29, 1864. Mustered out at San Antonio, Texas, Feb. 12, 1866.

Farrington, Charles E. 57-58. Enlisted in company M, 2nd Cavalry, Sept. 1, 1864, at Jackson, for 1 year, age 23. Mustered, Sept. 1, 1864. Discharged at Edgefield, Tenn., June 21, 1865. Died at Milan, Mich., Nov. 20, 1889.

Farr, George A., B. S., 1890. Enlisted in company K, 1st Infantry, April 18, 1861, at Adrian, for 3 months, age 19. Mustered, May 1, 1861. Mustered out at Detroit, Mich., Aug. 7, 1861. Orderly sergeant, battery M., 4th U. S. Artillery, July, 1861-65; State senator, 1879-83; trustee of the Northern Michigan Asylum, 1885-91. Regent of the University of Michigan, 1896-; collector of customs, district of Michigan, 1897-; lawyer, Grand Haven, Mich.

Foster, Charles T., 57-58. Lansing. Enlisted in company G, 3d Infantry, as corporal, May 10, 1861, at Grand Rapids, for 3 years, age 23. Mustered, June 10, 1861. Sergeant. Killed in action at Seven Pines, Va., May 31, 1862.

French, Alfred O., Royalton. 60-61. Enlisted in company C, 25th Infantry, as corporal, Aug. 9, 1862, at Royalton, for 3 years, age 18. Mustered, Sept. 10, 1862. Sergeant, Feb. 6, 1865. Discharged at New York City, May 23, 1865. Present residence, Lincoln, Mich.

Greene, William M., Lansing. 57-59. Law student at Ann Arbor 1860-62. Enlisted in company A, 20th Infantry as sergeant, Aug. 9, 1862, at Lansing, for 3 years, age 22. Mustered, Aug. 18, 1862. First sergeant Oct. 2, 1862. Discharged to accept promotion, April 25, 1863 by S. O. No. 163. Commissioned 2nd lieutenant, Jan. 28, 1863. Killed in action at Horse Shoe Bend, Ky., May 10, 1863. Buried in National Cemetery, Mill Springs, Ky. Grave No. 6, Section F.

Griswold, Joseph B., Vermontville. 59-60, 62-63. M. D. (Rush Med. Coll.) 1868-. Entered service as second assistant surgeon, Fourth Infantry. Commissioned, Nov. 15, 1864. Mustered, to date, Dec. 12, 1864. Discharged for promotion to date, Jan. 8, 1866. Commissioned surgeon, Jan. 9, 1866. Mustered, Jan. 9, 1866. Mustered out and honorably discharged, May 26, 1866. City physician, 1876-78; alderman, 1880-82; member of the Board of Education, 1885-89; president of the Michigan Medical Society, 1897. Physician and surgeon, 184 N. Lafayette St., Grand Rapids, Mich.

Gunn, Daniel R. Enlisted in company D, Twenty-first Infantry, February 29, 1864 at Grand Rapids, for 3 years, age 24. Mustered, March 1, 1864. Joined regiment at Chattanooga, Tenn., April 7, 1864. Wounded in action, March 19, 1865. Discharged by G. O. No. 77, War Department.

Haigh, George W., 57-60, Dearborn. Enlisted in company D, 24th Infantry, as first sergeant, Aug. 12, 1862, at Dearborn, for 3 years, age 23. Mustered, Aug. 13, 1862. Wounded in action at Fredericksburg, Va., May 29, 1863. Commissioned first lieutenant July 4, 1863. Mustered, Oct. 7, 1863.

Haigh, Thomas, 60-61, M. D. (N. Y. College of Phys. and Surg.), 1865; Member company D, 24th Michigan Volunteer Infantry; assistant professor of physiology, 1866-68. Physician. Died in New York, N. Y., June 8, 1871.

Hammond, Josiah T., 57-59, Tekonsha. Entered service in company I, 20th Infantry, at organization, as second lieutenant, age 22. Commissioned, July 20, 1862. Mustered, Aug. 19, 1862. Commissioned first lieutenant, company K, Jan. 26, 1863. Mustered, April 25, 1863. Resigned and honorably discharged, March 16, 1864, by S. O. No. 119, War Department. Present residence, Jackson, Mich.

Hollister, Ralph H., 61-63. Enlisted in company B, 11th Cavalry as sergeant, Oct. 1, 1863, at Victor, for 3 years, age 21. Mustered, Oct. 7, 1863. Quartermaster sergeant. Transferred to company G, Eighth Cavalry, July 20, 1865. Mustered out at Nashville, Tenn., Sept. 22, 1865. Farmer, 1865-74; supervisor of Victor township for three years; merchant; county clerk, Lake County, 1880-81; supervisor of Webber township, 1895-98. County clerk and register of deeds, Lake County, 1898-. Baldwin, Michigan.

Hollister, Charles E., Victor. B. S., 1861, M. S., 1865. Enlisted in Howland's Engineers, Sept. 16, 1861, at Battle Creek for 3 years, age 22. Mustered, Oct. 9, 1861. Mustered out at St. Louis, Mo., Jan 8, 1862. County surveyor, Shiawassee county, for many years; farmer, Laingsburg, Mich. Died at Laingsburg, Mich., April 11, 1900.

Ingersoll, Charles L. Commerce. M. S., 1877. Enlisted in company G, 9th Cavalry, March 7, 1863, at Commerce, for 3 years, age 18. Mustered, May 19, 1863. Transferred to company A, May 1, 1864. Commissary sergeant, May 1, 1864. Mustered out at Lexington, N. C., July 21, 1865. Died at Grand Junction, Colo., Dec. 8, 1895. (See Professors.)

Jerome, David Howell. In 1862, he raised the 23rd Michigan Infantry, commandant in camp with the rank of colonel. In 1863-66 military aid to Governor Crapo; 1865 member of the State Military Board. State senator, member of committee, 1873 to revise the state constitution; trustee of the Michigan Military Academy; governor, 1881-84. Died 1896.

Jewell, Charles Adolphus, M. S., 1865. Sergeant company I, 8th Michigan Infantry, August 15, 1862; 2nd lieutenant, December 31, 1863; 1st lieutenant, March 27-June 26th, 1865. Township supervisor, 1897-98; president of a Farmers' Club for several years; master of a grange, 1898. Farmer, Hudson, Michigan.

Johnson, Colonel D., 59-62, M. D. (University of Michigan), 67. Assistant surgeon, 3d Michigan Volunteer Cavalry, April 4, 1865-January 15, 1866; Physician. Died, January 26, 1876.

Kedzie, Robert Clark, A. M., M. D., D. Sc., LL. D. Entered service in 12th Infantry at organization, as assistant surgeon, Jan. 15, 1862, at Vermontville, for 3 years, age 37. Commissioned, Jan. 15, 1862. Mustered,

Jan. 23, 1862. Commissioned surgeon April 25, 1862. Resigned, Oct. 8, 1862. Died at Agricultural College, Mich., Nov. 7, 1902. Buried in Mount Hope Cemetery, Lansing, Mich. (See Professors.)

Kilbourn, Joseph H., Lansing. 61-64. Enlisted in company E, 1st Sharpshooters, June 30, 1863, at Lansing, for 3 years, age 27. Mustered, July 8, 1863. Promoted sergeant Oct., 1863. Promoted first sergeant, Nov., 1863. Discharged on surgeon's certificate of disability at Chicago, Ill., March 22, 1864. Postmaster at Big Rapids, 1887-91. Farmer and fine stockbreeder, Big Rapids, Mich.

Knorr, Albert H., 59-60. Enlisted in company A, Hall's Independent Sharpshooters, Sept. 5, 1864, at Mottville, for 1 year, age 24. Mustered, Sept. 7, 1864. Transferred to company F, First Michigan Sharpshooters, March 15, 1865. Discharged near Georgetown, D. C., June 3, 1865. Pensioner, Mottville, Michigan.

Leeds, Alex., 58-59. First Lieutenant company H, 6th Michigan Volunteer Infantry; railway postal clerk for 20 years. Dentist, Grafton, W. V.

Leeds, Lodowick C., 59-60. Third sergeant company C, 25th Michigan Volunteer Infantry, August 8, 1862-July, 1865; merchant. Deputy collector of internal revenue, July 1, 1899-. 111 Veal St., Dallas, Texas.

Lewis, Charles B., 57-58. Enlisted in company G, 3rd Infantry, May 13, 1861, at Grand Rapids, for 3 years, age 19. Mustered, June 10, 1861. Discharged for disability, Sept. 1, 1861. Enlisted in company E, 6th Cavalry, Feb. 17, 1865 at Jackson, for 1 year, age 23. Mustered, Feb. 17, 1865. Transferred to company H, First Cavalry, Nov. 17, 1865. Discharged at expiration of term of service at Fort Leavenworth, Kan., Feb. 17, 1866. Journalist with nom-de-plume of "M. Quad." No. 71 Third Place, Brooklyn, N. Y.

Lewis, Henry G., Lansing. 57-58. Enlisted in company D, 6th Cavalry, Sept. 8, 1862, at Lansing, for 3 years, age 24. Mustered, Oct. 11, 1862. Discharged at Washington, D. C., June 19, 1865. Died Lansing, Mich.

Main, Sidney G., Owosso. 62-63. Entered service in Company E, 29th Infantry, at organization, as first lieutenant. Commissioned, July 29, 1864; commanding company, April 30, 1865. Mustered out at Murfreesboro, Tenn., Sept. 6, 1865. Ex-county surveyor, Emmet and Shiawassee counties. Surveyor, real estate dealer and lumberman, Brutus, Michigan.

Manchester, Caleb. 57-58. Member 11th Michigan Volunteer Infantry. Traveling salesman. 436 Maple St., Battle Creek, Michigan.

Manchester, Elias. 67-68. Enlisted in Company F, 1st Cavalry, Feb. 13, 1865, at Battle Creek, for 1 year, age 17. Mustered, Feb. 15, 1865. Joined regiment, May 25, 1865. Discharged at Fort Leavenworth, Kan. Dec. 5, 1865. Farmer and stock breeder, Hastings, Neb., 1885-94. Carpenter and builder, 802 East 15th St. Kansas, City, Mo.

Markham, Alonzo B., Plymouth. 60-61. (Univ. of Mich.), 1868. Enlisted in company C, Twenty-fourth Infantry, Aug. 5, 1862, at Plymouth, for 3 years, age 19. Mustered, Aug. 15, 1862. Transferred to Invalid Corps, Dec. 9, 1863. Discharged at Camp Chase, Ohio, July 2, 1865, from company D, 22d Regiment, Veteran Reserve Corps. Banker and lawyer, Mayville, Mich.

Marston, William Henry Pickering was a soldier in the Civil War, where he was wounded making it necessary to remove eleven and one-half inches of the tibia; later he founded the Amasa B. Watson Post, Grand Rapids,

Michigan. He died while serving as postmaster of Fitzgerald, Georgia. For other items, see his biography in this volume.

McCreery, William B., Flint. Enlisted in company F, 21st Infantry, as sergeant, April 23, 1861, at Flint, for 3 years, age 24. Mustered, May 25, 1861. Appointed second lieutenant to date, July 10, 1861. Appointed quartermaster, July 25, 1861. Commissioned captain, company G, Sept. 10, 1861. Wounded in action at Williamsburg, Va., May 5, 1862. Honorably discharged to accept promotion, Dec. 1, 1862. Commissioned lieutenant colonel, 21st Infantry, Feb. 3, 1863. Mustered, March 18, 1863. Taken prisoner at Chickamauga, Ga., Sept. 20, 1863. Escaped from Libby Prison Feb. 9, 1864. Resigned on account of disability, Sept. 14, 1864. Died December 9, 1896. Buried at Flint, Mich. In Gen. Thomas's order is the following: "On account of wounds (six in number) received at various times in action, while in discharge of duty, the honorable scars of which he now wears. In accepting the resignation of Col. William B. McCreery, the major general commanding takes occasion to express his high appreciation of the soldierly qualities and faithful discharge of duty which have ever characterized Col. McCreery's actions at the same time regretting the existence of the disability which compels the withdrawal of so valuable an officer from the service." (See Members of State Board.)

Martin, E. Brook, 62-63. Member 22nd Michigan Volunteer Infantry. House of representatives, Michigan, 1881-83. Farmer, Bozeman, Mont.

McVean, David E., Lowell, 61-62. Enlisted in company B, sixth Cavalry, as corporal, Sept. 15, 1862, at Grand Rapids, for 3 years, age 20. Mustered, Oct. 11, 1862. Sergeant, Nov. 1, 1863. Quartermaster sergeant, Feb. 1, 1865. Mustered out at Fort Leavenworth, Kan., Nov. 24, 1865. Died, April 29, 1902. Buried at Grand Rapids, Mich.

Millard, W. Scott, Constantine. 64-65. Enlisted in company E, (reorganized) Eleventh Infantry, Feb. 28, 1865 at Three Rivers, for 1 year, age 18. Mustered, Feb. 28, 1865. Mustered out at Nashville, Tenn., Sept. 16, 1865. Died, July 27, 1895. Buried at Niles, Mich.

Morehouse, Thomas B., Lansing. 58-. Enlisted in company A, 20th Infantry, as corporal, Aug. 9, 1862 at Lansing, for 3 years, age 23. Mustered, Aug. 18, 1862. Sergeant, Dec. 25, 1862. First sergeant, Nov. 6, 1863. Wounded in action, May 12, 1864. Commissioned first lieutenant, Oct. 24, 1864. Mustered, Dec. 5, 1865. Commanding company from May 4, 1865. Mustered out and honorably discharged at Delaney House, D. C., May 30, 1865.

Morse, Allen Benton. Ionia. 1857-60. Enlisted in company B, 16th Infantry as sergeant, July 30, 1861, at Ionia for 3 years, age 22. Mustered, Sept. 7, 1861. Commissioned first lieutenant, company I, 21st Infantry, Dec. 16, 1862. Discharged to accept promotion, Dec. 26, 1862. Commissioned adjutant, Feb. 3, 1863. Discharged to accept promotion, April 9, 1863. Mustered, April 10, 1863. Wounded in action at Mission Ridge, Tenn., resulting in amputation of arm, Nov. 25, 1863, while on staff duty as acting assistant adjutant general. Resigned and honorably discharged Sept. 1, 1864. Prosecuting attorney, Ionia County, 1867-71; state senator, 1875; mayor of Ionia, 1882; justice of the supreme court, 1886-92; U. S. consul to Scotland, 1893-95. Lawyer, Ionia, Mich.

North, Elmer D., Ingham County. 61-62. Enlisted in company E, Eighth Infantry, Aug. 14, 1861, at Lansing, for 3 years age 20. Mustered, Sept. 23, 1861. Discharged for disability at Washington, D. C., Jan. 6, 1862. Re-entered service in company D, 14th Infantry, as sergeant.

Enlisted, Dec. 3, 1861, at Lansing for 3 years. Mustered, Feb. 13, 1862, in commissary department from June, 1864 to Feb., 1865. Discharged at expiration of term of service at Fayetteville, N. C., March 14, 1865. Present residence, Lansing, Mich. County superintendent of schools, 1871-75; teacher, 1875-79; secretary Board of Examining Surgeons, 1885-92. Physician.

Osband, Edwin R., Wayne County. 57-58. Enlisted in company H, engineers and mechanics, as sergeant, Oct. 23, 1861, at Marshall, for 3 years, age 25. Mustered, Oct. 29, 1861. Discharged at expiration of term of service at Atlanta, Ga., Oct. 31, 1864. In auditor general's office. Farmer. Died at Lansing, Mich., December 8, 1892.

Palmer, Oscar, M. D., 57-58. (Columbian Univ., O.) 1864. Member company C, U. S. Sharpshooters, June, 1861. Transferred as hospital steward to 2d U. S. Sharpshooters; assistant surgeon, January 20, 1864. Resigned, October, 1864; house of representatives, 1883-85; ex-prosecuting attorney, Crawford County; medical director, G. A. R., Department of Michigan, 1895-99. Physician, farmer and lawyer, Grayling, Michigan. (See Members of State Board.)

Paulding, Cornelius. Monroe City. 57-58. Enlisted in company A, 4th Infantry, as sergeant, June 20, 1861, at Adrian, for 3 years, age 20. Mustered, June 20, 1861. Color sergeant. Died of disease at Washington, D. C., Aug. 12, 1861.

Pierce, Almon J. South Haven. 65-67. Enlisted in company G, 19th Infantry, Aug. 15, 1862, at South Haven, for 3 years, age 19. Mustered Sept. 5, 1862. Discharged at St. Louis, Mo., March 12, 1863, to enlist in Marine Brigade. Discharged at Vicksburg, Miss., Jan. 17, 1865. County surveyor, Van Buren County, Mich. and Brown County, S. D., surveyor, Grand Forks, S. D.

Pingree, Hazen S. Enlisted in company F, Massachusetts Heavy Artillery. (See his biography in this volume.)

Prentiss, Albert N., Marshall. 1861, B. S. 1864, M. S. Enlisted in Howland's Engineers as corporal, Sept. 16, 1861 at Battle Creek, for 3 years, age 25. Mustered, Oct. 9, 1861. Mustered out at St. Louis, Mo., Jan. 8, 1862. (See Professors.)

Preston, Charles M., 64-65. Enlisted in company D, Seventh Cavalry, Sept. 9, 1864, at Oneida, for 1 year, age 22. Mustered, Sept. 9, 1864. Regiment, Oct. 30, 1864. Wounded in action at Louisa Court House, Va., March 8, 1865. Discharged at Fort Monroe, Va., July 8, 1865. Present residence, Grand Ledge, Michigan.

Prutzman, Edward N., Three Rivers, 61-63. Enlisted in 25th Infantry as sergeant major, Sept. 11, 1862, at Kalamazoo, for 3 years, age 20. Mustered, Sept. 11, 1862. Discharged to accept promotion, March 1, 1863. Commissioned second lieutenant, company I, Feb. 6, 1863. Reported as first lieutenant. Mustered, March 1, 1863. Commissioned adjutant, June 17, 1863. Mustered, June 17, 1863. Acting assistant adjutant general, First Brigade, Second Division, 23d Army Corps, Aug., 1863. Killed in action at Resaca, Ga., May 14, 1864.

Redfern, Francis W. 62-63. Enlisted in company C, First Cavalry, Feb. 14, 1865 at Kalamazoo for 1 year, age 22. Mustered, Feb. 14, 1865. Promoted quartermaster sergeant. Discharged at Fort Leavenworth, Kan., Dec. 5, 1865. Present residence, Essex, Michigan.

Russell, Orlando D. 59-61. Enlisted in company G, First Infantry, April 24, 1861 at Burr Oak, for 3 months, age 21. Mustered, May 1, 1861.

Mustered out at Detroit, Mich., Aug. 7, 1861. Dealer in farm produce, Sturgis, Mich.

Scott, Alexander H., Schoolcraft. 58-60. Enlisted in company C, 6th Infantry as sergeant, June 19, 1861, at Fort Wayne, for 3 years, age 21. Mustered, Aug. 20, 1861. Promoted to hospital steward, Dec. 10, 1862. Discharged to accept commission in Corps d'Afrique, Aug. 13, 1863. Commissioned first lieutenant, 12th Corps d'Afrique. Re-entered service as assistant surgeon, in 12th Infantry at DeVall's Bluff, Ark. Commissioned, Oct. 10, 1864. Mustered, Dec. 26, 1864. Mustered out at Camden, Ark., Feb. 15, 1866. Present residence, St. Joseph, Mich. Mayor of St. Joseph, four terms; physician and surgeon.

Skinner, John D., Jr., Windsor. 57-59. Enlisted in company B, 2d U. S. Sharpshooters, Sept. 29, 1861, at Detroit for 3 years, age 27. Mustered, Oct. 4, 1861. Killed in action at Rappahannock River, Va., Aug. 21, 1862.

Skinner, Merritt Clark. 57-59. University of Michigan, 1860-61; member company A, 21st Indiana Volunteer Infantry, July 5, 1861-February 10, 1866; teacher, 1866-70; druggist, 1870-74; county superintendent of schools, 1874-76; principal of schools at Albion, 1876-82; clerk of the Noble circuit court, 1883-92. Drainage commissioner and insurance business, Albion, Michigan.

Smith, William Augustus. 57-58. First lieutenant company H., 22d Michigan Volunteer Infantry, July 31, 1862. Captain company H, January 5, 1863. Died of wounds received in action at the battle of Chickamauga, Oct. 11, 1863.

Stevens, Theron A. Stockbridge. 58-60. Enlisted in company E, 17th Michigan Infantry, Aug. 12, 1862, at Ypsilanti, for 3 years, age 19. Mustered, Aug. 19, 1862. Mustered out at Delaney House, D. C., June 3, 1865. Principal of schools at Bath, 1875-85; at Stockbridge, 1888-91, 93-95; county commissioner of schools, Ingham County, 1891-94; farmer, hardware merchant, Stockbridge, Mich.

Sweet, Albern K., Burns. 57-58. Enlisted in company H, Fifth Infantry, Aug. 8, 1862, at Owosso, for 3 years, age 23. Mustered, Aug. 8, 1862. Wounded in action at Wilderness, Va., May 6, 1864. Discharged May 31, 1865, to accept appointment in U. S. colored troops. Shirt manufacturer, 1864-88. Contractor for painting and decorating, 1896. 30 Gratiot Ave., Detroit, Michigan.

Thomas, William A., Barry County. 58-60. Enlisted in company F, Eighth Infantry, as sergeant, Sept. 7, 1861, at Prairieville, for 3 years, age 21. Mustered, Sept. 23, 1861. Discharged for disability at Port Royal, S. C., Jan. 6, 1862. Postmaster at Cheney at the time of death. Died at Cheney, Kan., November 11, 1896.

Thompson, Alvaro Jerome Ward. 58-60. Member company C, 32d Iowa Volunteer Infantry, August 14, 1862-June 14, 1865; county auditor, 1881-87. Secretary of the Dakota County Building Association and fire insurance agent, Hastings, Mich.

Tracy, Samuel Mills, M. S., 1876. Member company A, 41st Wisconsin Volunteer Infantry, 1864. Editor of the "Practical Farmer," 1875-77; professor of botany and horticulture in the University of Mo., 1877-87; director of the Mississippi Experiment Station, 1888-97; author of a Manual of Botany for the Use of Elementary Schools in the Southern States, 1900. Editor and botanist, Biloxi, Miss.

Van Fleet, John M. 64-65. Member 8th Michigan Volunteer Cavalry. Judge of the 34th Judicial Circuit, Indiana, November 15, 1888-November

15, 1894. Author of "Van Fleet's Collateral Attack on Judicial Proceedings," "Res Judicata." Lawyer, Elkhart, Indiana.

Van Loo, Cornelius, Zeeland. 58-59. Enlisted in company F, 21st Infantry, as corporal, Aug. 15, 1862, at Greenville, for 3 years, age 24. Mustered, Sept. 3, 1862. First sergeant, March 1, 1863. Wounded in action at Chickamauga, Ga., Sept. 20, 1863. Commissioned first lieutenant, Dec. 1, 1862. Mustered, Sept. 22, 1863. Commanding company, Sept. 22, 1863. Mustered out at Washington, June 8, 1865. Register of deeds, Ottawa county, 1869-75; farmer, 1875-82; house of representatives, 1881-84; real estate dealer, 1882-90; furniture manufacturer, 1890-99. Secretary and treasurer, Zeeland Furniture Manufacturing Co., Zeeland, Mich.

Wallace, James N. Lyons. 59-60. Entered service in company D, 9th Infantry at organization, as second lieutenant, Sept. 5, 1861, at Lyons, for 3 years, age 22. Commissioned, Oct. 12, 1861. Mustered, Oct. 15, 1861. Commissioned first lieutenant, company K, July 28, 1862. Mustered, Feb. 12, 1863. Discharged to date Oct. 26, 1863, to accept promotion as captain, 13th U. S. Colored Infantry. Furniture and real estate business, 1865-. No. 5 Prospect St., Ypsilanti, Mich.

Wellings, James H., Dewitt. M. S., M. D., (Bellevue Hosp. Med. Coll.) 1874. Student at the college, 1860-63. Enlisted in 1st company, Sharpshooters, attached to 27th Infantry, Feb. 27, 1864, at Dewitt, for 3 years, age 24. Mustered, March 1, 1864. Re-entered service in company E, 2d Infantry as second lieutenant. Commissioned, April 1, 1864. Mustered, June 29, 1864. Discharged, Dec. 28, 1864, S. O. No. 471, War Department. Present residence, Lansing, Michigan.

Wheeler, Charles Fay, B. S. In the 147th regiment of Infantry, New York Volunteers. (See Professors).

Whitney, Truman W. 64-65; later at Hillsdale College. Member company E, 8th Michigan Volunteer Cavalry; farmer, manufacturer. General attorney for Ann Arbor R. R. Co., St. Louis, Mich.

Wisner, Edward M., Pontiac. 58-60. Enlisted in company D, Fifth Infantry as sergeant, June 19, 1861, at Fort Wayne, for 3 years, age 19. Mustered Aug. 28, 1861. Commissioned first lieutenant, company A, 22d Infantry, at organization, July 31, 1862. Mustered, Aug. 22, 1862. Resigned on account of disability, Jan. 31, 1863. Last address, Fulton, N. Y.

Wood, Webster A., Livonia. 57-58. Enlisted in company K, 24th Infantry, as musician, Aug. 5, 1862, at Livonia, for 3 years, age 20. Mustered, Aug. 13, 1862. Mustered out at Detroit, Mich., June 30, 1865. Brick manufacturer, carpenter, farmer, stone mason, Northville, Mich.

Yerkes, Silas A., Lowell. Entered service in company C, 13th Infantry, at organization, as second lieutenant, age 27. Commissioned, Oct. 3, 1861. Mustered Jan. 17, 1862. Discharged to accept promotion May 20, 1862. Commissioned first lieutenant, May 15, 1862. Mustered, May 21, 1862. Discharged to accept promotion, April 6, 1863. Commissioned captain, Feb. 26, 1863. Mustered, April 7, 1863. Wounded in action at Chickamauga, Ga., Sept., 1863. Brevet major, U. S. Volunteers, March 15, 1865, for meritorious services during the campaign in Georgia and the Carolinas. Commissioned major, May 12, 1865. Discharged on account of disability, May 15, 1865. (See Members of State Board.)

APPENDIX F.

Next follow in alphabetical order the opinions of alumni referred to who have had the dual experience of teaching in a separate agricultural college and in one connected with a university. It concerns teaching agriculture in at least thirty-three states:

L. H. Bailey, '82, professor of horticulture, later professor of horticulture and dean of the Agricultural College of Cornell University. He writes:

"The old schism between the college of agriculture and the university has passed out in nearly all the states in which the two are combined. The progress in this direction in the last five and ten years has been enormous and the old spirit in the best institutions no longer exists. For myself, I am convinced that the largest educational results are going to be secured, at least on the real college and post-graduate grades, when agriculture takes its rightful place with other subjects in a high college and university scheme. The time will soon be, if it is not already here, when a university that is a university must include agriculture.

"It was not until forty years after the founding the Michigan Agricultural College that the colleges and departments established in connection with universities began to find themselves, and to make great headway."

Charles E. Bessey, '69, professor of botany (for a time including horticulture) fourteen years in Iowa State College; professor of botany thirty-four years in the University of Nebraska, four years acting president:

"The college of agriculture fares better as one of the colleges of a broadly planned university."

E. A. Burnett, '87, assistant professor of agriculture; later professor of animal husbandry in South Dakota Agricultural College; later professor of animal husbandry, University of Nebraska; later dean and director Nebraska Experiment Station:

"There is economy in consolidation of the physical plants into one institution. Political rivalry and the duplication of instruction is frequently avoided.

"On the whole I look to see the best investigation done in our larger institutions where the time of the investigator is not taken up with instruction. I also expect to see the highest standards of instruction in combined institutions."

K. L. Butterfield, '91, superintendent of farmer's institute, instructor in University of Michigan, president of the Agricultural College of Rhode Island, and later of Massachusetts Agricultural College, writes:

"It was a fortunate thing for agriculture that so many of the agricultural colleges were originally organized as separate institutions. Generally speaking during the last twelve or fifteen years the agricultural colleges connected with state universities have taken the lead. In general, however, it is fair to say that in recent years the agricultural colleges connected with the universities have become the leaders.

"As to the future, there are many advantages that come from the organic connections of the agricultural college with the state university, and there will always be the danger of duplication and excessive cost in those states where the university and the agricultural college are separate."

R. C. Carpenter, '73, instructor and professor in Michigan Agricultural College for fifteen years, professor of experimental engineering in Cornell University for twenty-four years:

"At present agricultural colleges hold their own in all our universities where they are combined. It is certain that M. A. C. has been wonderfully successful."

L. A. Clinton, '89, was assistant professor of agriculture in Clemson College, S. C., assistant agriculturist Cornell Experiment Station, director Storrs Experiment Station and professor of agronomy, Connecticut Agricultural College for ten years; agriculturist in charge of farm management North Atlantic States for U. S. Dept. Agr. He writes: "I can see absolutely no reason why the agricultural college should not do its work just as well if it were located at the university. At the present time agriculture is the popular course and is likely to overshadow all of the other departments of the university with which it is located."

A. B. Cordley, '88, instructor in the University of Vermont, assistant entomologist in the U. S. Dept. of Agriculture, dean and director of the Agricultural College of Oregon. He strongly favors an agricultural college connected with a good university.

C. S. Crandall, '73, instructor at M. A. C. for five years; professor of horticulture and botany in Colorado Agricultural College for some years; professor of pomology and plant breeding in University of Illinois for twelve years, writes: "When at Michigan Agricultural College I was made to feel that it was better for an agricultural college to be entirely separate from a university. In the pioneer days I believe that more was accomplished by its being alone, but as they stand today, I believe that in most states there are decided advantages in having the agricultural college connected with the state university."

E. Davenport, '78, professor of agriculture, later dean and director of the agricultural college of the University of Illinois:

"1. The agricultural students have a wider range of choice in the non-technical subjects, and manifestly upon the whole a higher grade of instruction than would be available in an institution organized primarily for agriculture.

"2. They receive this non-technical instruction in company with students of other and varied interests, all of which tends greatly to the broadening of the minds of the men.

"3. All the associations of the institution are more varied and tend strongly to the creation and preservation of a broader atmosphere, an atmosphere more closely akin to the life of the world outside of college.

"4. Conversely, the influence of the agricultural student is wholesome upon students of other courses in the university.

"5. The agricultural faculty has superior opportunities for securing information along kindred scientific and economic lines, thereby being sure from day to day that they are in step with the very latest advancement in collateral branches of learning. In this way, through their university affiliations, this faculty comes at once into immediate touch with institutions of the highest order the world over.

"6. The agricultural faculty that maintains its work with credit in the university exerts a widespread and powerful, though indirect influence over students in the other colleges of the institution, tending to give agriculture, as such, good standing in the minds of non-agricultural people, who otherwise would have little acquaintance with its aims and purposes.

"7. The broader associations within the college must inevitably lead to broader views outside in the practical business and social relations of life.

"8. A single institution operating along many lines is able to build up within the state an educational unity which is almost impossible of creation. with two or three institutions developed along separate lines.

"9. Last of all, it is cheaper than to duplicate laboratories and departments, such as those in general science, language, history, etc."

E. E. Elliott, resident graduate '90-'93, M. S., '11, professor of agriculture, Agricultural College of Washington; dean of the college of agriculture, University of Idaho, writes:

"After an experience of many years and covering three different institutions, in my opinion the ideal arrangement for an agricultural college is to be connected with and be an integral part of a state university. I find that the separate agricultural college always aspires to develop into a university on its own account and there is always an antagonism between two institutions where such is the case, with tendency on the part of the university to become supercilious and on the part of the agricultural college to feel looked down upon. Wherever the college has had a chance to stand on equal terms it has dominated the university."

V. R. Gardner, '05, instructor in horticulture, University of Maine; professor of pomology, Oregon Agricultural College, writes: "In general animal husbandry, dairying, horticulture are taught as well in the one as in the other, but apparently the more academic or liberal arts, subjects, such as English, mathematics, history, economics and the languages are generally more satisfactorily handled in the university than they are in the strictly land grant college."

E. S. Good, 1903, instructor at M. A. C. and at the University of Illinois, later professor of animal husbandry in the University of Kentucky: "Taking everything into consideration it is better for an agricultural college to be connected with a good university than to exist by itself."

P. G. Holden, '89, assistant in the Experiment Station, later assistant professor in the University of Illinois; later superintendent of agricultural extension in Iowa State College:

"Agricultural colleges separate from universities have exerted a much greater influence upon agriculture than those where the college was established in connection with the university.

"It is my belief that from the standpoint of agricultural education they will continue to exert a greater influence upon the public mind upon agricultural practises."

F. W. Howe, '93, U. M.; M. A. C., '09, instructor in agriculture at M. A. C.; dean of the college of agriculture in Syracuse University, writes:

"We are very well satisfied indeed, with our condition and outlook here for the college of agriculture. There is a unique condition in the fact that we have not a cent of aid from state or federal sources and are working out a history that *must* be different from that of the state colleges of agriculture; and I feel that the differences are in our favor. I do not know of any state college presidency or deanship that I would be willing to accept, with its political entanglements, at a salary equivalent to what I receive now."

George C. Humphrey, '01, instructor in animal industry, and still later professor of animal husbandry in the University of Wisconsin:

"From what I have been able to observe, I believe that it is preferable to have the college a part of a good university. It aids in getting the best

possible trained men and necessary equipment for the teaching of all subjects. It avoids jealousy and wire pulling, which is apt to exist between two separate institutions dependent upon their legislature for support. It makes it much easier to secure the necessary appropriations. It tends to turn the minds of all the people of the state toward their university, and therefore enables a university to exert the greatest good in educating the people of a state. It gives students in other colleges an opportunity to get into sympathy with agriculture and, vice versa, agricultural students to appreciate the work of the other colleges. The growing popularity of agriculture tends to give the college of agriculture its just portion of funds for support.

W. D. Hurd, '99, "I have had experience in three types of institutions. M. A. C. represented the type where agriculture and engineering were tied up together. The University of Maine represented the type where the college of agriculture is attached to the university, and the Massachusetts agricultural college is purely an agricultural institution.

"On the whole from my own experience and a good deal of study and observation in other states, I think the college of agriculture allied with the state university represents the better type. Better feeling usually exists within the state, it is more economical of state funds, and students are certainly benefited by coming in contact with others who are pursuing entirely different lines of work.

W. C. Latta, '78, instructor, later professor of agriculture at Purdue University, Indiana, and now, also superintendent of farmers' institutes:

"I promptly passed your letter of January 26th around among the M. A. C. men who are here.

"To make a long story short, we believe that the agricultural college could start best as a *separate* institution. We believe, however, that *under existing conditions* there are advantages in the *combined* school. I would give two other reasons for the *combined* school, at the present time:

"1st. Better facilities.

"2nd. Spur to maintain the standard which comes from contact with other aggressive courses of study."

J. S. Moore, '03, instructor and post graduate associate professor of horticulture in University of Wisconsin.

He says: "If there is a provision made for giving the agricultural students the kind of work they need for the work which is to come later, then I believe that it is a very great advantage to have the agricultural college combined with the university."

F. B. Mumford, '91, assistant professor of agriculture; later dean of the college of agriculture in the University of Missouri:

"As a result of twenty years of experience and observation I am unhesitatingly in favor of the organization of an agricultural college in connection with a university. Some of the advantages of this plan over the separate organization of these two institutions are as follows:

"The standards of scholarship are higher in the agricultural colleges associated with universities.

"The requirements for admission are more rigidly enforced.

"The best type of technical instruction in agriculture at the present time is found in those colleges of agriculture associated with universities. Institutions searching for men in agronomy, animal husbandry, horticulture, and dairy husbandry do not find these leaders in the separate agricultural

college in the same proportion as in the colleges of agriculture associated with universities.

H. W. Mumford, '91, instructor, assistant or professor of agriculture at M. A. C. for six years; professor in the University of Illinois for thirteen years: "To my mind there is only one answer to this question, and that is, it is a decided advantage to an agricultural college to be a college of a great university.

"The more I have thought about it, the more certain I am that in every state where the colleges and universities are separate both the agricultural college and the university are handicapped and that this handicap will become so evident in the future that amalgamation or mediocrity is inevitable."

Wendall Paddock, '93, professor of horticulture in the Agricultural College of Colorado; later professor of horticulture in the Agricultural College of Ohio State University:

"It is my candid opinion that an agricultural college is better off when attached to a strong state university. The principal reasons for this are that the associations tend to prevent lopsidedness in both instructors and students. Many men of national repute visit a university during the year that are never seen at agricultural colleges.

E. Dwight Sanderson, '97, has taught or served as entomologist in Maryland, Delaware, Texas, New Hampshire and since 1912 has been director of the Agricultural Experiment Station of the University of West Virginia. He writes: "I think there is no question that everything being equal, a college of agriculture in connection with the university has much better chance for success. I believe that over ninety per cent of the men who have had experience with both classes of institutions will agree with this view. I believe rightly done it would be much to the advantage of several states to have the agricultural college made a part of the university under the same board of control, even though it might be located on its present campus."

V. M. Shoesmith, '01, for five years instructor in Kansas Agricultural College, two years at the State University of Ohio, and five years professor of farm crops at M. A. C. He writes: "While there are doubtless advantages in having the agricultural college connected with the university, these do not in my opinion overshadow the advantages of the smaller institutions. The instructions of these institutions is so good, and the training for citizenship on the whole better than that offered by the large university." t

L. J. Smith, '06, instructor in farm mechanics, professor of agricultural engineering in the University and Agricultural College of Manitoba, writes: "I believe there are advantages in having the agricultural college in close touch with other colleges of a large university. It is my opinion that these agricultural institutions that are connected with universities will probably turn out better graduates for investigation work."

J. W. Toumey, '89, instructor at M. A. C. two years; professor of biology in the university of Arizona seven years; assistant professor or director of forest school at Yale University fourteen years:

"The forest school at Yale has its own board of governors, its own faculty, its own endowment and is largely independent, in its organization and work. I firmly believe that we gain a good deal in being a graduate school of the university rather than an independent school located at some other place."

James Troop, '78, instructor, later professor in Purdue University joined in the statement made by W. C. Latta in favor of a union.

H. E. Van Norman, '97, student instructor in dairy husbandry; later instructor in dairy husbandry, Purdue University, Indiana; later professor of dairy husbandry, Pennsylvania State College, still later professor in the University of California:

"With the institution, as at Wisconsin, the school of agriculture benefits by its broader contact. On the other hand, I believe it is easier to secure from the legislature a half million dollars for each of three institutions than it would be to secure a million and a half for the same three lines of work in one institution.

"I do not think of a single institution which has had aggressive leadership that has seriously suffered because either it was separate or it was connected with a university.

"I am confirmed in the opinion that men are broader and that there is a decided advantage in having an agricultural student come in contact with men who are equally observant in some other subject than agriculture. Down at Berkeley where we find the agricultural students mingling with students of science, engineering and liberal arts, I feel that these men are the better."

C. A. Willson, '06, has not yet replied to my letter of inquiry, but expressed verbally his approval of an agricultural college joined to a university. He was instructor in animal industry at M. A. C., later professor of the same in the University of East Tennessee.

C. G. Woodbury, '04, instructor, later associate horticulturist in Purdue University, Indiana:

"It has seemed to me that the agricultural college of a state should be a part of the state university. Agricultural students do need to be given as wide an outlook as possible. I believe that they need to be made to realize more fully than they now realize, the cultural background of their technical studies. I believe this wide outlook is less difficult to secure in a many sided university than it is in a agricultural college."

NEXT BELOW ARE GIVEN THE OPINIONS OF SOME GRADUATES
OF M. A. C. WHO TAUGHT ONLY IN A SEPARATE COL-
LEGE OF AGRICULTURE OR IN AN AGRICULTURAL
COLLEGE JOINED TO A UNIVERSITY.

Hugh P. Baker, '01, had experience teaching in horticulture in Iowa Agricultural College; department of forestry in Pennsylvania State College and dean of the college of forestry at Syracuse. Dean Baker says:

"The college of forestry at Syracuse has a separate board, and is supported by the State of New York, true the chancellor of the university is nominally chief executive of the college of forestry.

"I don't believe that a college of agriculture attached to a large university can do as efficient work in the training of men as can a college of agriculture developed by itself as in the case of M. A. C., Pennsylvania State College and others." (Compare this opinion with that of director Tourney of Yale. The views are exactly opposite.)

C. P. Close, '95, "My experience is limited to teaching in M. A. C., Utah Agricultural College, Delaware College, Maryland Agricultural College. These are not connected with a university. My vote would be not to unite the agricultural with the university."

Charles E. Ferris, '90, instructor, professor and dean of engineering in succession for twenty-two years in the University of Tennessee:

"For two reasons I am convinced that the state university and the land grant college should be one institution: First, for the broader culture which is given to students of agriculture and engineering. This daily influence on the vocational group cannot be overestimated. Second, where the land grant college and the state university are separate institutions, there are continual jealousies."

C. P. Gillette, '84, instructor in M. A. C.; entomologist in Iowa Experiment Station; professor and director in Colorado Agricultural College; He says: "I believe that in most of our states it is better today to have the two institutions connected in one."

Dr. U. P. Hedrick, '93, writes:

"I have taught in three agricultural colleges, Oregon, Utah and Michigan, where there was no direct connection between the college of agriculture and the state university and in all three I have felt that there was a distinct loss because of the distant relationship in the institutions. I am now in a state where the college of agriculture has its place in the university with the colleges of law, medicine, arts and science and from a more or less intimate knowledge of the relations these colleges hold to each other I am all the more certain that there is great gain in the close association of agricultural colleges with those of the other arts and sciences. At one time or another I have spent a week or more at the state universities in Ohio, Wisconsin, Illinois and Missouri, in all of which the college of agriculture is a part of a university as in New York. It has seemed to me in all of the states last named that the union of colleges of which agriculture was one was good. I am not so sure about the desirability at this late date of union between the Michigan Agricultural College and the University of Michigan if such union means the same board of control and a division of funds but I am very certain that there would be much gain to the college and some gain to the

university if the relationship between the two institutions were closer, close enough so that work done in one institution should count for its full value in the other and close enough so that there would be frequent interchanges of students and faculty in the work of the two institutions."

E. R. Lake, '85, instructor at M. A. C., professor of botany and forestry in Oregon Agricultural College; professor of the same in Washington Agricultural College, writes:

"Personally I can see no good reason, now with the large resources at their command why an agricultural college should be part of a university.

C. A. McCue, '01, professor of horticulture in Delaware College, says:

"I think there are greater advantages in the agricultural college connected with the university. Such connection has a tendency to give the agricultural student a much broader outlook and it also gives the opportunity to take related courses in the university."

N. S. Mayo, '88, has been connected with the teaching in Agricultural Colleges in Michigan, Connecticut, Kansas and Virginia, all separate.

"I am therefore partial to agricultural colleges separate from the universities, agriculture is coming to its own, hence there is not the necessity for a separate organization that formally existed."

Howard R. Smith, '95, "Since leaving M. A. C., my work as instructor or professor has been, one year in Missouri, several years at the University of Nebraska, and three years at the University of Wisconsin. When a student in Michigan, I thought our plan there the best. Since leaving I have become converted to the idea that it is better to have the agricultural college on the same campus with the state university. With consolidation, duplication is avoided and the state can afford to pay high salaries to get the very best men available."

W. A. Taylor, '88, never a teacher in an agricultural college, was pomologist, and recently chief of the bureau of plant industry, writes:

"If the spirit of the state university is broadly sympathetic with the needs of the plain people, there is a distinct advantage in having the agricultural college associated with the university."

W. J. Beal, not an alumnus of M. A. C. but for forty years a teacher there and a teacher, in part, of all those quoted herein, excepting professors Prentiss, and Bessey. The reader may like to know what he, the writer thinks about this question. Here it is:

"Agricultural colleges started like those of Michigan, Iowa, Pennsylvania, Maryland for the first thirty years were better begun independently; after that time, their chances for success were much enhanced by a connection with a university."

"In this connection it is also interesting to present the view of J. L. Snyder, the present president of the college, who is quoted in the Michigan Alumnus for November, 1911, as saying:

"Of course, I do not believe that the Michigan Agricultural College with 53 years of achievement behind it, and the State College of Mines, with 25 years of splendid work to its credit could be completely absorbed, but I think the time has come when they could be closely affiliated with the University of Michigan diploma, and it could not fail to give greater prestige to the graduate than a diploma from the separate school. The greatest difficulty with the proposition would be in the governing board. Under the present system the office demands only two or three days a month. If there were the three institutions to look after, however, the demands might be much heavier. If remuneration, in the way of a salary, is offered, the state will not be able to secure as efficient men."

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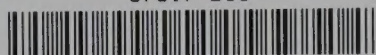
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